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From: rob gordon
Sent: 2018-04-16T22:09:17-04:00
Importance: Normal
Subject: [EXTERNAL] Heritage Foundation Report on Endangered Species Act
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Aurelia:

Here, finally, is the paper I mentioned regarding implementation of the Endangered Species Act. It was made available today on the Heritage Foundation's website. Here is the [link](#) and a PDF can be downloaded from the "download report" link under the title and next to the date.

Best,

Rob

To: Aurelia Skipwith (aurelia_skipwith@ios.doi.gov)[aurelia_skipwith@ios.doi.gov]
From: Kent Burton
Sent: 2018-04-23T15:40:02-04:00
Importance: Normal
Subject: [EXTERNAL] Santa Cruz Area Low Level HCPs (PG&E)
Received: 2018-04-23T15:41:55-04:00
[PGE MHJB HCP Final Draft 12_29.pdf](#)

Hi Aurelia,

Attached is PG&E's filing before USFWS related to two low level HCPs that are in process – both for the Santa Cruz long-toed salamander (one has the California red legged frog as well). One is for Line 1816-15 that covers approximately 2.8 miles of pipeline, and the other is for a variety of pipelines (L-1818-01, 1816-01, 1817-01, 1816-05, 301A, 301G and 301B) for approximately 8 miles. We gather technical and substantive issues have been addressed and it's ready to proceed through the clearance process.

Specifically, we're told by folks in CA office that the HCPs are pending action in DC, including final review and publication in the Federal Register. As you might expect, interested in particular to learn when the HCP's might be published in the Federal Register (which I gather triggers a 30-day comment period before final approval and the issuance of permits).

Hope this helps. Please call with any questions.

Best,

Kent

**Low-Effect Habitat Conservation Plan for PG&E Gas Pipeline 1816-15
Vegetation Management Projects along Graham Hill Road and Ocean
Street in Santa Cruz County, California**



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20 December 2017

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Executive Summary

Pacific Gas and Electric Company (PG&E) is responsible for funding and maintaining its natural gas transmission lines throughout a service territory of approximately 94,000 square miles in California. Part of this responsibility is for the Company to ensure that incompatible vegetation on top of and adjacent to the pipeline is removed to ensure compliance with Federal requirements as well as to ensure safe, reliable natural gas is delivered to its customers.

PG&E is applying for an incidental take permit under section 10(a)(1)(B) of the Endangered Species Act of 1973 as amended (16 USC 153101544, 87 Stat.884), from the U.S. Fish and Wildlife Service (USFWS) for the incidental take of the endangered Mount Hermon June beetle (MHJB) (*Polyphylla barbata*: Coleoptera: Scarabaeidae) associated with a vegetation removal project occurring at 28 locations in Santa Cruz County, California.

This vegetation removal project involves the targeted removal of approximately 1,243 trees and 632 brush¹ units present on top of or immediately adjacent to natural gas transmission pipeline (DFM 1816-15) at 28 locations to improve gas transmission pipeline safety, reliability and accessibility for emergency personnel. Targeted vegetation will be cut above ground and selected woody vegetation within the Pipe Zone and targeted trees within All Zones (Pipe, Border, and Outer Zones as defined in the Project Description) will be selectively treated with a California Department of Pesticide Regulations approved herbicide control regrowth.

Forty work locations were assessed and 28 work locations occur in known or potential MHJB habitat (2.9 acres or 126,324 square feet). Avoidance measures have been included into the project description to reduce impacts to the MHJB. In addition, to offset potential direct and indirect impacts associated with this pipeline safety work at the 28 locations, PG&E proposes to purchase 126,324 conservation credits (2.9 acres) for the MHJB from the USFWS approved Zayante Sandhills Conservation Bank. In addition, this HCP proposes to cover potential future repairs of the gas pipeline within the project area. While repair work on this gas transmission line is not planned, periodic and regular surveys over the 20 year permit term may detect leaks which would require repair.

Section 1. Introduction and Background

1.1 Overview and Background

Pacific Gas and Electric Company (PG&E) has a combined electric and gas service territory of 94,000 square miles in northern and central California. PG&E owns and operates approximately 6,750-miles of natural gas transmission pipeline within the service territory.

PG&E is responsible for funding and maintaining its natural gas transmission lines throughout California. Part of this responsibility is to ensure that incompatible vegetation present on top of and adjacent to the pipeline is removed to ensure safe, reliable natural gas is delivered to its customers. PG&E developed

¹ The number of trees and brush units are for 28 out of the 40 projects where suitable habitat for Mount Hermon June beetle has been identified.

Utility Standard TD-4490S (See Section 2- Project Description) for maintaining gas pipeline rights-of-way to comply with federal law that requires the management of vegetation within gas transmission rights-of-way for thorough and complete leak detection and cathodic surveys. Vegetation present in our gas transmission easements pose problems with surveying the lines for leaks, as well as patrolling the lines for signs of encroachment or damage from erosion, landslide, fire, or other natural forces. Additionally, tree roots can grow around steel pipelines and damage their protective coating, which increases risks for corrosion and leakage. Trees present within our rights-of-way can also result in emergency access delays, which could prolong incidents or outages in the event a pipeline is damaged or a leak develops.

Vegetation removal is anticipated to be completed at all locations within approximately 3-4 weeks in 2017 but work may occur in 2018 depending on permit approvals, weather, and crew availability. Some treatment of targeted vegetation would also continue annually throughout the permit term. The project work areas are located along Graham Hill Road and Ocean Street in the cities of Scotts Valley and Santa Cruz respectively, in Santa Cruz County, California, USA (Figure 1).

Based on the environmental assessment performed by Dr. Richard Arnold (Arnold 2016), ²⁹ of the 40 proposed work locations that are proposed for vegetation removal are located in areas that either may contain potentially suitable habitat for, or are in areas that contain previously identified locations of the Federally endangered Mount Hermon June Beetle (*Polyphylla barbata* (Coleoptera: Scarabaeidae; MHJB) (Figure 2). While habitat quality for the MHJB is variable over the 28 separate work areas, there is potential for the species to be present at the work locations and so it is assumed present at the 28 work areas.

This vegetation removal project involves the removal of approximately 1,243 trees and 632 brush units³ present on top of or adjacent to gas transmission pipeline (DFM 1816-15) to improve gas transmission pipeline safety, reliability and accessibility. The removal of vegetation is not uniform in nature as the vegetation targeted for removal differs based on distance from the pipeline. Per Utility Standard TD-4490S, targeted trees growing immediately over and within 14 feet of either edge of the pipeline and all woody brush growing within 5 feet of either edge of the pipeline must be removed (See Project Description). Overall, the total area where all work will occur will not exceed a total width of 30 feet⁴.

Work on this project will occur off the shoulder of the road both on private property and in franchise (public land within a city or county) along Graham Hill Road and Ocean Street. Access to the work locations will occur from the paved Graham Hill Road and Ocean Street to the extent safely possible. Vegetation will be removed manually and with mechanical equipment, including a bucket truck, bobcat/ASV⁵ and chipper. The removed plant material will be chipped on site and hauled off-site. All vehicles will be parked on the road or road edge and a bobcat/ASV with rubber tracks may be used to move cut plant material from the job site to the road. Trucks will be parked on pavement to reduce impacts wherever it is safely possible to do so.

³ For the 28 projects where suitable habitat for Mount Hermon June beetle has been identified, removals include approximately 1,243 trees and 632 brush units.

⁴ 30 feet is calculated as 2 feet directly above the pipeline and 14 feet on either side of the pipeline edge.

⁵ An ASV is a brand of compact track loaders and skid steer loaders. Loaders are used to move larger pieces of cut vegetation out of the work area.

An effective method that controls stump re-sprouting will be required on site to fully comply with the Utility Standard and prevent the re-growth of incompatible vegetation over the pipeline. On an annual basis for the duration of the 20 year permit term, all select targeted regrowth will be treated with a targeted low volume foliar treatment using a California Department of Pesticide Regulations approved herbicide in accordance with the label. All applications will be made under the supervision of a California licensed Pest Control Advisor who shall issue a written Pest Control Recommendation. Repeated annual herbicide applications using a broad leaf selective herbicide (foliar treatment) will be performed for all trees and all woody vegetation re-growth in the Pipe Zone. Only trees that meet the Utility Standard (TD-4490S) DBH requirement in the Border and Outer Zones will be removed and re-treated using the foliar herbicide (Section 2.1).

PG&E proposes to incorporate avoidance measures into the project to reduce impacts to the MHJB (Section 5). To avoid and minimize impacts to the MHJB, all vegetation removal work will occur above ground in the presence of a qualified biologist. No stump grinding or pulling out of root balls will occur unless PG&E is required to do so by the landowner or to ensure public safety. Work is also proposed to occur between September 1st and April 30th at the 28 locations with MHJB habitat present to avoid the flight season for the MHJB (the flight season is defined as May 1st to August 31st). Following vegetation removal, PG&E proposes to reseed the work areas with a native and weed-free seed mix using species that are compatible with the Utility Standard.

In addition, while pipeline repair work is not currently scheduled within the surveyed area, based on coordination and communications with the Service, PG&E recognizes that future pipeline maintenance and repair work may also need to occur within the surveyed work areas in MHJB habitat as a part of PG&E's pipeline safety program. PG&E may determine that it may be necessary to test and repair the existing gas line during the 20 year permit term to ensure the safe and reliable delivery of natural gas and to comply with Federal regulations. Therefore, in an effort to efficiently address this issue we propose to cover these activities in this HCP. These activities would generally consist of excavating the area around the line needing repair and then backfilling prior to repair activities. All impacts are anticipated to be temporary in nature and all areas would be restored with native sandhills plant species.

PG&E proposes to mitigate for the vegetation removal work (2.9 acres) at the 28 work locations where MHJB habitat is present in two ways: 1) the implementation of avoidance measures in the project and 2) through the purchase of 126,324 conservation credits (2.9 acres) from the Zayante Sandhills Conservation Bank, a USFWS approved bank. Operations and Maintenance work would be compensated for through coordination with the Service as described in Section 6.2.3.

1.2 Permit Holder/Permit Duration

Upon approval of the incidental take permit (section 10(a)(1)(B) permit pursuant to the Endangered Species Act) it is assumed that PG&E will proceed as soon as authorized provided that work is conducted outside the flight season for the Mount Hermon June beetle (flight season defined as May 1st – August 31st so vegetation removal work will only be performed between September 1st and April 30th of any year to avoid the flight season). The period of performance may also be constrained by crew availability, weather (e.g., flooding, mudslides, or fire danger), and traffic control plans or other permits.

The requested permit term is 20 (twenty) years. The vegetation removal portion of the job is not anticipated to take longer than 4 weeks depending on crew availability and traffic plan requirements for work hours. However, depending on traffic control restrictions and weather conditions in the area, work could potentially take longer than 4 weeks. The 20 year permit duration is to cover incidental take during annual removal and foliar treatment of targeted regrowth of selected trees within all three zones (Pipe, Border, and Outer Zones) and all woody shrub species in the Pipe Zone that experience re-growth, as well as potential excavation work associated with temporary Operations and Maintenance work (Sections 2.1 and 6.2.3).

1.3 Permit Boundary/Covered Lands

Vegetation management activities in potential habitat for the MHJB will occur at 28 different work locations along Graham Hill Road and Ocean Street in Santa Cruz County, CA, USA (Appendix A. Figures 1-4. Note: All work areas (40) were surveyed and were included in the maps of the projects, although only 28 projects are being submitted for coverage for MHJB under this permit).

PG&E's gas pipeline 1816-15 runs alongside Graham Hill Road and Ocean Street through a number of private properties and city/county public land (franchise property). Work will occur off the shoulder of the road both on private and franchise properties at each of the 28 project work locations.

1.4 Species to be Covered by the Permit

The following species is referred to as a "covered species" as related to the Incidental Take Permit:

Common Name	Scientific Name	Conservation Status	
		Federal	State
Mount Hermon June beetle	<i>Polyphylla barbata</i>	Endangered	-

The Mount Hermon June beetle was listed in 1997 as endangered species by USFWS (USFWS 1997). A recovery plan was published by the USFWS for the MHJB, Zayante band-winged grasshopper (ZBWG) and four plant species in the Zayante Sandhills (Arnold 2016, USFWS 1997).

1.5 Regulatory Framework

Federal Endangered Species Act

The federal Endangered Species Act (ESA) and its implementing regulations prohibit the take of any fish or wildlife species that is Federally listed as threatened or endangered without prior approval pursuant to either Section 7 or Section 10(a)(1)(B) of the ESA. ESA defines take as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Federal regulation 50 CFR 17.3 further defines the term harm in the take definition to mean any act that actually kills or injures a Federally listed species, including significant habitat modification or degradation.

Section 10(a) of the ESA establishes a process for obtaining an incidental take permit, which authorizes non-Federal entities to incidentally take Federally listed wildlife or fish subject to certain conditions.

Incidental take is defined by ESA as take that is “incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.” Preparation of a low effect conservation plan, generally referred to as a habitat conservation plan (HCP), is required for all Section 10(a)(1)(B) permit applications.

Section 7 of the ESA requires all Federal agencies to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any species listed under the ESA, or to result in the destruction or adverse modification of its habitat. Technically, the issuance of an incidental take permit is an authorization for take by a federal agency. Consequently, in conjunction with issuing a permit, the Service must conduct an internal Section 7 consultation on the proposed HCP. The internal consultation is conducted after a proposed HCP is developed by a non-Federal entity and submitted for formal processing and review. Provisions of Sections 7 and 10 of the ESA are similar, but Section 7 requires consideration of several factors not explicitly required by Section 10. Specifically, Section 7 requires consideration of the indirect effects of a project, effects on Federally listed plants, and effects on critical habitat. (ESA requires that the Service identify critical habitat to the maximum extent that it is prudent and determinable when a species is listed as threatened or endangered.) The internal consultation results in a Biological Opinion prepared by the Service regarding whether implementation of the proposed HCP will result in jeopardy to any listed species or will adversely modify critical habitat.

The Section 10 Process

The Section 10 process for obtaining an incidental take permit has three primary phases: (1) the HCP development phase; (2) the formal permit processing phase; and (3) the post-issuance phase.

During the HCP development phase, the project applicant prepares a plan that integrates the proposed project or activity with the protection of listed species. An HCP submitted in support of an incidental take permit application must include the following information:

- Impacts likely to result from the proposed taking of the species for which permit coverage is requested.
- Measures that will be implemented to monitor, minimize, and mitigate impacts; funding that will be made available to undertake such measures; and procedures to deal with unforeseen circumstances.
- Alternative actions considered that would not result in take.
- Additional measures the Service may require as necessary or appropriate for purposes of the plan.

The Service has established a special category of HCP, called a low-effect HCP, for projects with relatively minor or negligible impacts. Based on criteria for determining whether a low-effect HCP is appropriate, as described below and in the HCP Handbook the Applicant, Pacific Gas & Electric Company, believes this proposed HCP qualifies as a low-effect HCP.

Low-effect HCPs are appropriate for projects that will have minor or negligible effects on Federally listed, proposed, or candidate species and their habitats that are covered by the HCP and minor or negligible effects on other environmental resources. Implementation of low-effect HCPs and their associated incidental take permits, despite authorization of some small level of incidental take, individually and cumulatively have a minor or negligible effect on the species covered by the HCP. The

determination of whether an HCP qualifies for the low-effect category is based on the anticipated impacts of the project prior to implementation of the mitigation plan. The purpose of the low-effect HCP is to expedite handling of HCPs for activities with inherently low impacts; this category of HCP is not intended for projects with significant potential impacts that are subsequently reduced through mitigation programs.

The HCP development phase concludes and the permit processing phase begins when a complete application package is submitted to the appropriate permit-issuing office. A complete application package for a low-effect HCP consists of an HCP, a permit application, and \$100 fee from the applicant. The Service must also publish a Notice of Availability of the HCP in the Federal Register; prepare an Intra-Service Section 7 Biological Opinion; prepare a Set of Findings, which evaluates the Section 10(a)(1)(B) permit application in the context of permit issuance criteria (see below); and prepare an Environmental Action Statement, a brief document that serves as the Service's record of compliance with the National Environmental Policy Act (NEPA) for categorically excluded actions (see below). An implementing agreement is not required for a low-effect HCP. A Section 10 incidental take permit is granted upon a determination by the Service that all requirements for permit issuance have been met. Statutory criteria for issuance of the permit specify that:

- The taking will be incidental.
- The impacts of incidental take will be minimized and mitigated to the maximum extent practicable.
- Adequate funding for the HCP and procedures to handle unforeseen circumstances will be provided.
- The taking will not appreciably reduce the likelihood of survival and recovery of the species in the wild.
- The applicant will provide additional measures that the Service requires as being necessary or appropriate.
- The Service has received assurances, as may be required, that the HCP will be implemented.

During the post-issuance phase, the permittee and other responsible entities implement the HCP, and the Service monitors the permittee's compliance with the HCP as well as the long-term progress and success of the HCP. The public is notified of permit issuance by means of the Federal Register.

NEPA National Environmental Policy Act (NEPA)

NEPA requires that federal agencies analyze the environmental impacts of their actions (in this instance, issuance of an incidental take permit) and include public participation in the planning and implementation of their actions. NEPA compliance is obtained through one of three actions: (1) preparation of an environmental impact statement (generally prepared for high-effect HCPs); (2) preparation of an Environmental Assessment (generally prepared for moderate-effect HCPs); or (3) a categorical exclusion (allowed for low-effect HCPs). The NEPA process helps federal agencies make informed decisions with respect to the environmental consequences of their actions and ensures that measures to protect, restore, and enhance the environment are included, as necessary, as a component of their actions. Low-effect HCPs, as defined in the HCP Handbook, are categorically excluded under NEPA, as specified by the Department of Interior Manual 516DM2, Appendix 1, and Manual 516DM6, Appendix 1.

National Historic Preservation Act (NHPA)

All Federal agencies are required to examine the cultural impacts of their actions (e.g., issuance of a permit). This may require consultation with the State Historic Preservation Office (SHPO) and appropriate American Indian tribes. All incidental take permit applicants are requested to submit a Request for Cultural Resources Compliance form to the Service. To complete compliance, the applicants may be required to contract for cultural resource surveys and possibly mitigation.

The Request for Cultural Resources Compliance form is provided in Appendix D.

Section 2. Project Description/Activities Covered by Permit

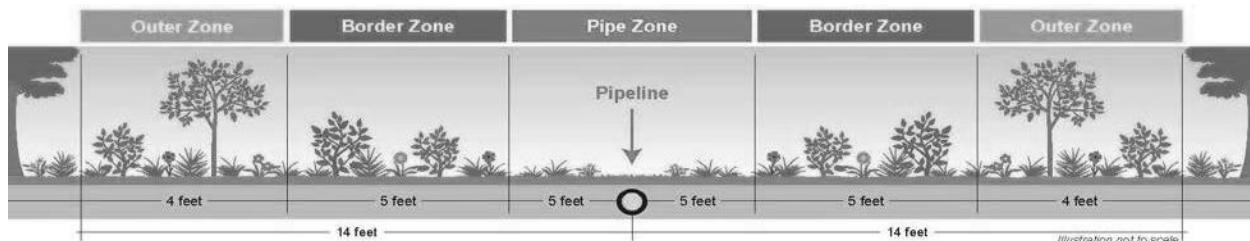
2.1 Project Description

This vegetation management project involves the removal of trees and woody brush present within the right-of-way of natural gas transmission pipeline 1816-15 along Graham Hill Road and Ocean Street to improve pipeline safety and accessibility. Roots of certain tree and brush species growing within a defined proximity to the gas pipeline may affect its safe operation, while above-ground growth may limit accessibility by first responders and crews.

The need for this permit is associated with the above ground vegetation maintenance (removal) activities along gas transmission pipelines to ensure compliance with federal law the applicant's Utility Standard TD-4490S:

Vegetation Zone Design:

- A hard cut is the severe change from one zone to another without a natural transition between the two zones. The Vegetation Zone Design avoids “hard cuts” on rights-of way that begin from the area over the pipelines (defined as the Pipe Zone) and expands to the outer edges beyond the Pipe Zone called Border Zones.
- The Vegetation Zone Design allows the landscape to incorporate an environmentally balanced “feather cut” from the Pipe Zone as it moves outward to the Border Zone and finally to the Outer Zone:



Pipe Zone:

- The Pipe Zone is a 12 foot corridor (5 feet on either side of the pipeline and the 2 feet present directly above the gas transmission pipeline). In the Pipe Zone, all trees, woody shrubs, and

woody vegetation will be removed. Low-profile herbaceous vegetation will remain in this area.

Border Zone:

- The Border Zone is the area that is located between the Pipe Zone and Outer Zone. From a distance of 5 feet to 10 feet from the pipeline, only trees exceeding 8 inches in diameter at 4.5 feet above ground (DBH) or of a species likely to exceed 8 inches DBH at maturity, and the trunk or main branch shall be removed. All other vegetation that does not currently meet or can be reasonably expected to rise to the 8 inch DBH requirement will remain in this area.

Outer Zone:

- The Outer Zone is the area next to the Border Zone. From 10 feet to 14 feet from the pipeline, only trees exceeding 36 inches in DBH or is of a species likely to grow to and exceed 36 inches in DBH at maturity, and the trunk or main branch shall be removed. All other vegetation that does not currently or can be reasonably expected to the reach the 36 inch DBH requirement will remain in this area.

To ensure pipeline and community safety, at each of the work locations, targeted trees growing within 14 feet of either edge of the pipeline as well as all woody brush growing within 5 feet of either edge of the pipeline will be removed (12 feet total width). The removals will involve selected trees that meet a threshold as defined in the Utility Standard previously described within a defined area of 30 feet at each work location (14 feet on either side of the pipeline plus the 2 feet directly above the pipeline).

All work is proposed to occur above ground level and no excavation is required to perform the vegetation removal. Vegetation will be removed manually and with mechanical equipment, including a bucket truck, bobcat/ASV, and chipper, with most work occurring from paved surfaces. Crews will utilize hand crews, a chip truck, and a trailered chipper for the entire project due to its proximity to the road. In cases where overhead electric lines are present, crews would bring in a bucket truck and overhead electric certified crews. Traffic control will also be onsite for the duration of the work and will be set up on paved areas or as per County regulations. All work is anticipated to take approximately 4 weeks to complete with work being completed during daylight hours approximately between 09:00 and 15:30.

The majority of the trees and brush within the work area will be chipped and cut vegetation will be hauled off site for disposal. Chipping of removed vegetation and temporary storage of brush piles will be on paved surfaces to the extent possible to reduce impacts to habitat. While cut vegetation will be off-hauled, some debris (e.g. some leaves, small branches, sawdust, etc.) associated with the vegetation removal activities will be left on site after work is completed. All cut stumps will be left intact and not ground down, unless PG&E is required to perform stump grinding by the private landowner.

To control the regrowth of trees all stumps will be treated with a California Department of Pesticide Regulations approved herbicide in accordance with the product label. On an annual basis all select targeted regrowth will be treated with a targeted low volume foliar treatment using a California Department of Pesticide Regulations approved herbicide in accordance with the label. All applications will be made under the supervision of a California licensed Pest Control Advisor who shall issue a written Pest Control Recommendation.

Foliar herbicide will only be applied in the following way on targeted vegetation, which will allow for the persistence of grasses, forbs, and non-woody vegetation to remain on site (in compliance with the Utility standard outlined above):

1. **Pipe Zone:** Herbicide treatment in the Pipe Zone will consist of a low volume foliar application that will be a 50% foliar coverage of target species only on all woody vegetation within 5 feet from edge of pipe (12 foot width- 5 foot on either side of the pipeline, 2 foot directly over the pipeline). All grasses and forbs are not targeted, and will not be sprayed. Vegetation targeted with foliar spray will include spraying of re-sprouting material from previously removed vegetation as well as new volunteer seedlings of woody vegetation and trees.
2. **Border Zone:** Treatment in the Border Zone (5 feet to 10 feet from the pipeline on either side) will consist of a low volume foliar application that will be a 50% foliar coverage of target tree species only. Vegetation targeted with foliar spray are all tree species that have the ability to be larger than 8 inches in diameter at 4.5 feet above grade at maturity within 5 feet to 10 feet from edge of pipe. No brush or grasses are targets in this zone.
3. **Outer Zone:** Treatment in the Outer Zone (10 feet to 14 feet from the pipeline on either side) will consist of a low volume foliar application that will be a 50% foliar coverage of target tree species only. Targets are all tree species that have the ability to be larger than 36 inches in diameter at 4.5 feet above grade at maturity within 10 feet to 14 feet from edge of pipe. No brush, woody vegetation, grasses, or tree species that are or will be less than 36 inches in diameter at 4.5 feet above grade at maturity will be targeted.
4. **Repeated Treatments:** After the initial vegetation removal, herbicide treatment may be repeated as frequently as annually, depending on the re-growth of vegetation that meets the DBH requirement in Utility Standard TD-4490S. Herbicide use is anticipated to be heavier earlier in the permit term and be reduced in the following years given less regrowth in subsequent years.

No laydown or staging areas are anticipated in order to perform work, but should a laydown or staging area be required it will be sited on pavement or in previously disturbed areas outside of habitat. To the extent safely possible, vehicles and equipment will stay on the paved surfaces unless off road vehicle access is required to perform work safely.

Vegetation removal associated with this project will occur at 40 locations along Graham Hill Road and Ocean Street in the cities of Scotts Valley and Santa Cruz, Santa Cruz County, California. However, only the 28 project areas that are anticipated to result in impacts to MHJB are described in this low-effect HCP (HCP). Representative photographs of work areas are provided in Appendix E.

Based on coordination and recommendations by the Service, PG&E proposes to include potential, future maintenance and/or repair activities to the gas line within the proposed project area. PG&E recognizes that future pipeline operations and maintenance repair work may need to occur within the surveyed work areas in MHJB habitat as a part of PG&E's pipeline safety program. Examples of operation activities include inspecting, monitoring, testing, and operating valves, enclosures, switches, and other components. Examples of maintenance activities include repairing and replacing facilities and structures, access in addition to emergency repair and replacement. Examples of this type of work includes remedial maintenance, pipeline valve recoating, pipeline valve replacement, pipeline cathodic protection, pipeline recoating, pipeline inspection, strength testing, pipeline replacement, etc. and

involves the following types of activities: grading, access, excavation of the pipeline and an area large enough around the pipeline to expose the bottom of the pipeline, staging, spoils piles placement, boring, pipeline marking, stringing pipe, pipe placement, welding, backfilling the excavation with the soil that was excavated, clean up and restoration. If gas line surveys reveal the need to conduct maintenance and/or repair activities, PG&E will notify the Service in writing at least 30 days in advance (unless the work is an emergency or severe enough to result in a reduction of pressure and loss of customers in which case PG&E will notify the Service as soon as possible, but no later than 30 days from identification of needed repairs) with information that includes: 1) project area and location, 2) extent of impacts in square feet, 3) dates of scheduled repairs, 4) proposed conservation measures; and, 5) proposed conservation credit purchase to offset impacts. PG&E anticipates compensating for impacts associated with maintenance and repair activities at a 1:1 ratio, in terms of impacts to credits purchased.

Vegetation targeted for removal varies for each of the 28 work areas where take coverage is requested varies.

1. **RW-V-12228_14:** The work area involves the removal of 82 trees, and 37 units of brush. Species involved include: 3 Japanese maple (*Acer palmatum*), 1 American smoketree (*Cotinus obovatus*), 5 willow (*Salix* sp.), 1 California bay (*Umbellularia californica*), 1 magnolia (*Magnolia* sp.), 5 privet (*Lingustrum* sp.), 1 lace leaf maple (*Acer dissectum*), 1 sourwood (*Oxydendrum arboreum*), 1 black locust (*Robinia pseudoacacia*), 1 redwood (*Sequoia sempervirens*), 1 citrus (*Citrus* sp.), 4 bottlebrush (*Callistemon* sp.), 1 ash (*Fraxinus* sp.), 14 birch (*Betula* sp.), 2 western juniper (*Juniperus occidentalis*), 28 miscellaneous brush, 4 poison oak (*Toxicodendron diversilobum*), 4 acacia (*Acacia* sp.), 2 European hackberry (*Celtis australis*), 1 red maple (*Acer rubrum*), 3 holly oak (*Quercus ilex*), 31 coast live oak (*Quercus agrifolia*), 2 chokecherry (*Prunus virginiana*), and 1 silver maple (*Acer saccharinum*). This site will require the use of a tracked vehicle (e.g. bobcat/ASV) to carry material to the chipper.
2. **RW-V-12229_14:** The work area involves the removal of 14 trees, and 9 units of brush. Species involved include: 4 miscellaneous brush, 4 oleander (*Nerium oleander*), 1 Ponderosa pine (*Pinus ponderosa*), 1 ash sp., 12 coast live oak, and 1 blackberry (*Rubus* sp.).
3. **RW-V-12231_14:** The work area involves the removal of 118 trees, and 20 units of brush. Species involved include: 1 California bay, 1 red fir (*Abies magnifica*), 1 redwood, 3 willow, 2 interior live oak (*Quercus wislizeni*), 1 Ponderosa pine, 10 bottlebrush, 10 privet, 57 coast live oak, 3 Monterey pine (*Pinus radiata*), 2 pittosporum (*Pittosporum* sp.), 1 beech (*Fagus* sp.), 5 Douglas fir (*Pseudotsuga menziesii*), 31 acacia, 3 poison oak, and 7 miscellaneous brush.
4. **RW-V-12232_14:** The work area involves the removal of 61 trees, and 4 units of brush. Species involved include: 2 western red cedar (*Thuja plicata*), 14 tupelo sour gum (*Nyssa sylvatica*), 2 Douglas fir, 2 willow, 8 California bay, 5 magnolia, 1 coyote brush (*Baccharis pilularis*), 10 coast live oak, 7 Monterey pine, 7 cherry (*Prunus* sp.), 1 madrone (*Arbutus* sp.), 1 acacia, 3 poison oak, and 2 Ponderosa pine. This site will require the use of a bobcat/ASV to remove vegetation.
5. **RW-V-12233_14:** The work area involves the removal of 36 trees, and 28 units of brush. Species involved include: 3 deodar cedar (*Cedrus deodara*), 1 sumac (*Rhus* sp.), 11 California bay, 2 holly oak, 8 coast live oak, 6 Monterey pine, 2 loquat (*Eriobotrya japonica*), 3 acacia,

and 28 miscellaneous brush. This site will require the use of a bobcat/ASV to remove vegetation.

- 6. **RW-V-12234_14:** The work area involves the removal of 44 trees, and 14 units of brush. Species involved include: 2 Jeffery pine (*Pinus jeffreyi*), 1 canyon live oak (*Quercus chrysolepis*), 12 miscellaneous brush, 4 California bay, 26 coast live oak, 4 Monterey pine, 1 dogwood (*Cornus* sp.), 6 acacia, and 2 poison oak. This site will require the use of a bobcat/ASV to remove vegetation.
- 7. **RW-V-12235_14:** The work area involves the removal of 23 trees, and 7 units of brush. Species involved include: 2 Douglas fir, 3 California bay, 1 Ponderosa pine, 17 coast live oak, 4 blackberry, 1 interior live oak, and 3 poison oak.
- 8. **RW-V-12236_14:** The work area involves the removal of 67 trees, and 26 units of brush. Species involved include: 21 miscellaneous brush, 2 oleander, 1 California bay, 1 bottlebrush, 1 privet, 2 sweetgum (*Liquidambar* sp.), 33 coast live oak, 3 Monterey pine, 5 willow, 13 acacia, 2 poison oak, and 9 redwood. This site will require the use of a bobcat/ASV to remove vegetation.
- 9. **RW-V-12237_14:** The work area involves the removal of 99 trees, and 27 units of brush. Species involved include: 3 Douglas fir, 1 big leaf maple (*Acer macrophyllum*), 1 willow, 4 California bay, 3 Chinese elm (*Ulmus parvifolia*), 1 mulberry (*Morus* sp.), 67 coast live oak, 1 Monterey pine, 18 acacia, 2 poison oak, and 25 units of miscellaneous brush. This site will require the use of a bobcat/ASV to remove vegetation.
- 10. **RW-V-12238_14:** The work area involves the removal of 4 willow trees.
- 11. **RW-V-12239_14:** The work area involves the removal of 31 trees, and 1 unit of brush. Species involved include: 7 willow, 3 California bay, 2 sycamore (*Platanus* sp.), 14 coast live oak, 3 interior live oak, and 3 acacia.
- 12. **RW-V-12241_14:** The work area involves the removal of 24 trees, and 12 units of brush. Species involved include: 5 manzanita (*Arctostaphylos* sp.), 16 coast live oak, 11 acacia, and 4 blackberry.
- 13. **RW-V-12242_14:** The work area involves the removal of 24 trees, and 5 units of brush. Species involved include: 18 acacia, 4 Ponderosa pine, and 7 coast live oak.
- 14. **RW-V-12243_14:** The work area involves the removal of 40 trees, and 38 units of brush. Species involved include: 1 willow, 8 Ponderosa pine, 3 sycamore, 1 cottonwood (*Populus* sp.), 26 Scotch broom (*Cytisus scoparius*), 25 coast live oak, 1 madrone, 1 acacia, 6 poison oak, and 6 blackberry.
- 15. **RW-V-12244_14:** The work area involves the removal of 24 trees, and 67 units of brush. Species involved include: 1 willow, 4 Ponderosa pine, 4 coyote brush, 2 ceanothus (*Ceanothus* sp.), 3 elderberry (*Sambucus* sp.), 15 coast live oak, 47 blackberry, 13 acacia, and 2 poison oak.
- 16. **RW-V-12246_14:** The work area involves the removal of 111 trees, and 88 units of brush. Species involved include: 56 manzanita, 5 chamise (*Adenostoma fasciculatum*), 2 Douglas fir, 6 miscellaneous brush, 5 toyon (*Heteromeles arbutifolia*), 9 Ponderosa pine, 6 ceanothus, 62 coast live oak, 1 blackberry, 44 acacia, and 3 poison oak.
- 17. **RW-V-12247_14:** The work area involves the removal of 29 trees, and 20 units of brush. Species involved include: 5 interior live oak, 5 coast live oak, 10 blackberry, 17 acacia, and 2 Canary Island pine (*Pinus canariensis*).
- 18. **RW-V-12248_14:** The work area involves the removal of 142 trees, and 31 units of brush. Species involved include: 5 manzanita, 1 scarlet firethorn (*Pyracantha coccinea*), 8 miscellaneous brush, 1 gooseberry (*Ribes uva-crispa*), 6 Ponderosa pine, 1 ceanothus, 1

elderberry, 56 coast live oak, 4 Scotch broom, 1 interior live oak, 1 tan oak (*Notholithocarpus densiflorus*), 77 acacia, 10 poison oak, and 1 blackberry. This site will require the use of a bobcat/ASV to remove vegetation.

19. **RW-V-12249_14:** The work area involves the removal of 47 trees, and 44 units of brush. Species involved include: 3 miscellaneous brush, 7 Ponderosa pine, 5 coyote brush, 13 ceanothus, 15 coast live oak, 1 blackberry, 25 acacia, and 22 poison oak. This site will require the use of a bobcat/ASV to remove vegetation.

20. **RW-V-12250_14:** The work area involves the removal of 26 trees, and 11 units of brush. Species involved include: 1 manzanita, 1 miscellaneous brush, 7 interior live oak, 5 Ponderosa pine, 3 coyote brush, 3 ceanothus, 11 coast live oak, 2 madrone, 1 acacia, and 1 poison oak.

21. **RW-V-12251_14:** The work area involves the removal of 68 trees, and 69 units of brush. Species involved include: 39 manzanitas, 8 miscellaneous brush, 24 interior live oak, 21 Ponderosa pine, 23 coast live oak, 1 Scotch broom, 19 poison oak, and 2 coffeeberry (*Frangula californica*).

22. **RW-V-12263_14:** The work area involves the removal of 20 trees, and 25 units of brush. Species involved include: 1 zelkova (*Zelkova* sp.), 1 Douglas fir, 24 miscellaneous brush, 1 oleander, 1 edible fig (*Ficus carica*), 3 citrus, 10 willow, 1 coast live oak, and 3 acacia. This site will require the use of a bobcat/ASV to remove vegetation.

23. **RW-V-12273_14:** The work area involves the removal of 21 trees, and 5 units of brush. Species involved include: 1 Douglas fir, 5 miscellaneous units of brush, 2 California bay, 1 Monterey cypress, 10 coast live oak, and 7 acacia.

24. **RW-V-8461_15** The work area involves the removal of 27 trees, and 19 units of brush, and the pruning of 1 tree. Species involved include: 11 redwood, 3 willow, 5 California bay, 19 elderberry, 4 coast live oak, 1 Monterey pine, 1 box elder (*Acer negundo*), and 3 acacia.

25. **RW-V-8462_15:** The work area involves the removal of 10 trees, and 3 units of brush. Species involved include: 6 coast live oak, 3 photinia (*Photinia* sp.), 2 Douglas fir, and 2 redwood.

26. **RW-V-8554_15:** The work area involves the removal of 3 trees, and 1 unit of brush. Species involved include: 1 coast live oak, 1 cherry, 1 Douglas fir, and 1 miscellaneous brush.

27. **RW-V-9058_15:** The work area involves the removal of 45 trees, and 21 units of brush. Species involved include: 1 manzanita, 1 black locust, 5 Douglas fir, 7 miscellaneous brush, 7 Ponderosa pine, 25 coast live oak, 2 blackberry, 4 tan oak, 2 madrone, 1 acacia, and 11 Scotch broom.

28. **RW-V-9059_15:** The work area involves the removal of 3 acacia trees.

Vegetation that will be removed from private properties and dedicated easements in the work areas includes the following totals of native and non-native species, as well as some species that are identified on the CAL-IPC list: 3 Japanese maple, 1 American smoketree, 42 willow, 41 California bay, 6 magnolia, 16 privet, 1 lace leaf maple, 1 sourwood, 2 black locust, 24 redwood, 4 citrus, 15 bottlebrush, 2 ash, 14 birch, 2 western juniper, 303 acacia, 2 European hackberry, 1 red maple, 5 holly oak, 552 coast live oak, 2 chokecherry, 1 silver maple, 1 oleander, 76 Ponderosa pine, 77 blackberry, 1 red fir, 43 interior live oak, 25 Monterey pine, 2 pittosporum, 1 beech, 24 Douglas fir, 2 western red cedar, 14 tupelo sour gum, 13 coyote brush, 8 cherry, 6 madrone, 3 deodar cedar, 1 sumac, 2 loquat, 2 Jeffery pine, 1 canyon live oak, 1 dogwood, 2 sweetgum, 1 big leaf maple, 3 Chinese elm, 1 mulberry, 5 sycamore, 107 manzanita, 1 cottonwood, 42 Scotch broom, 25 ceanothus, 23 elderberry, 5 chamise, 5 toyon, 2 Canary Island pine, 1

scarlet firethorn, 1 gooseberry, 5 tan oak, 2 coffeeberry, 1 zelkova, 1 edible fig, 1 Monterey cypress, 1 box elder, 3 photinia, 82 poison oak, and 189 miscellaneous brush.

Estimation of Suitable Soils Within the Survey Area

The Mount Hermon June beetle is presumed present in areas containing suitable soils at the 28 project locations based on the biological review for the project (Arnold 2016). To approximate the work areas with suitable soils, a 30' width survey area⁶ was evaluated for potential impacts (Arnold 2016). Dr. Arnold's estimation of potential impacts associated with the project was based on an evaluation of the entire 30' swath of the survey area of all work locations (413,581 square feet, 9.5 acres). The 9.5-acre calculation adequately evaluates the impacts associated with an entire 30' swath of area to be cleared of vegetation. Further, it was determined through coordination with the Service that vegetation removal activities within 2.9 acres, of the evaluated 9.5 acre area as described above, may result in direct and/or indirect impacts to the species. This is primarily due to: 1) vegetation is not contiguous at the project sites, 2) vegetation removal is not uniform within the 30' survey area- different targeted removals are required at the Pipe Zone, Border Zone, and Outer Zone, and 3) many areas do not have vegetation that need to be removed within the 30' survey area. (For example, areas where no vegetation removal is planned are also included in the 9.5 acres even though no impacts will occur at many areas within this area).

Tree Canopy Calculation for Pipe Zone

To determine the impacts associated with the actual vegetation removed from the 28 work areas, a finer scale assessment of impacts were evaluated. An equation measuring tree canopy (Law et Al. 1994) was used to estimate canopy cover for the vegetation slated for removal (including brush where it extended over the tree canopy line).

As PG&E is only proposing to remove individual trees and incompatible vegetation over the line in differing degrees within the Pipe Zone, the Border Zone, and the Outer Zone, an estimate of canopy cover is a way to estimate areas where no work will occur in habitat and measure impacts associated with the work.

Each tree to be removed within the work areas was surveyed in the field by an arborist to map its location, identify species, measure diameter at breast height (DBH), and estimate height. However, canopy cover was not estimated in the field and the amount of area affected by tree removal could not be determined directly using the results of the field survey. Instead, an attempt was made to quantify the total area of canopy removed based on the known correlation between tree diameter and crown area. This is potentially problematic for several reasons. The relationship between diameter and crown area may be different between species, and other factors, especially crowding by neighboring trees, can diminish crown size. In addition, where canopies overlap vertically, removal of one understory or midstory tree may have a small to negligible effect on total canopy cover. With these reservations in mind, an equation was used to calculate crown area based on DBH for each tree proposed for removal.

⁶ The difference between the 28 feet (14 feet on either side of the pipeline) and 30 feet total has to do with the area immediately above the pipeline (2 feet) which totals the 30 feet in potential impacts.

The sum of the crown areas was then totaled to estimate canopy cover removed. Canopy cover removed was then used to determine project size and area of potential impact.

As described by Law et Al. (1994), tree crown cover was estimated using the following equation:

$$\text{MCA} = 0.0175 + 0.0205 D + 0.0060 D^2$$

where MCA (maximum crown area) is the percent of one acre and D is DBH in inches (Krajicek et al. 1961). The assumptions of this equation include 1) equation was developed to estimate the relative area of tree crowns in open-grown oak savanna habitat types, 2) the tree canopy of each tree does not overlap, and 3) tree crowns are circular.

Using this calculation, impact acreages were calculated by estimating the vegetation present within the 12 foot corridor in the removal areas (12 feet is calculated as five feet on either side of the pipe and the two feet directly over the pipeline). Thus, this calculation applies only to target vegetation that is present within the Pipe Zone where the majority of the vegetation will be removed and targeted with repeated foliar herbicide. Areas with pavement, gravel, or areas where no vegetation is present (and no impacts will occur) were removed from work area polygons. Similarly, due to the limited targeted vegetation (certain trees with defined DBH requirements for removal) in the Border Zones and Outer Zones, those areas were removed from this calculation. Using this calculation, removals of woody brush and trees and repeated targeted herbicide application within the Pipe Zone over the permit term will occur over 2.9 acres at the 28 work locations.

Dr. Richard Arnold calculated a rough estimate of the survey area at 9.5 acres. The actual total vegetation removal area of the Pipe Zone where repeated herbicide will target all woody brush and trees within the 12 foot corridor on the pipeline is 2.9 acres. This 2.9 acres takes into account: 1) removal of areas where no work will occur 2) that only trees within the Border Zone (trees with >8 inch DBH) and Outer Zone (trees with >36 inch DBH) removals will occur resulting in woody brush and other vegetation that will remain within the Border and Outer Zones and provide food sources (e.g., roots) for the beetle larvae after work is completed.

2.2 Activities Covered by Permit

Vegetation to be removed per project is identified in the project description (Section 2.1). Vegetation will be removed manually and with mechanical equipment, including a bucket truck and chipper. Crews will utilize hand crews, a chip truck, and a trailered chipper for the entire project due to its proximity to the road. In cases where overhead electric lines are present, crews would bring in a bucket truck and overhead electric certified crews. Traffic control will be per the traffic control permits issued for the project and may involve the placement of k-rail along the edge of the work area.

All trees and brush within the work area is proposed to be chipped and hauled off site for disposal. Chipping of removed vegetation and temporary storage of brush piles will be on paved surfaces to the extent possible. Private property trees and brush that are removed will be processed per the landowner's request or off-hauled.

All work is proposed to occur above ground level. All cut stumps will be left intact and not grinded unless PG&E is required to perform stump grinding by the private landowner.

No laydown areas are anticipated, but should a laydown area be required, it will be sited on pavement. All vehicles and equipment will stay on the paved surfaces except designated rubber tracked equipment or unless vegetation work requires access on soil for crew or public safety.

Restoration of the site will occur following work and impacts associated with this restoration may include broadcast seeding and stabilization.

To control the regrowth of trees all stumps will be treated with a California Department of Pesticide Regulations approved herbicide in accordance with the product label. On an annual basis and as detailed in the project description of this document, all select regrowth will be treated with a targeted low volume foliar treatment using a California Department of Pesticide Regulations approved herbicide in accordance with the label. All applications will be made under the supervision of a California licensed Pest Control Advisor who shall issue a written Pest Control Recommendation. Foliar herbicide shall only be applied in the following way, which will allow for the persistence of grasses, forbs, and non-woody vegetation (in line with the pipeline standard outlined above):

While no construction work is currently planned within the surveyed area covered in this permit, PG&E recognizes that future pipeline maintenance and operations repair work may need to occur on gas transmission facilities within the surveyed work areas in MHJB habitat as a part of PG&E's pipeline safety program over the permit term. Examples of operation activities include inspecting, monitoring, testing, and operating valves, enclosures, switches, and other components. Examples of maintenance activities include repairing and replacing facilities and structures, access, and emergency repair and replacement. Examples of this type of work includes remedial maintenance, pipeline valve recoating, pipeline valve replacement, pipeline cathodic protection, pipeline recoating, pipeline inspection, strength testing, pipeline replacement, etc. and involves the following types of activities: grading, access, excavation, staging, boring, pipeline marking, stringing pipe, pipe placement, welding, clean up and restoration.

Section 3. Environmental Setting/Biological Resources

3.1 Environmental Setting

Work will occur in the cities of Scotts Valley and Santa Cruz, Santa Cruz County, California. Work areas are within franchise or in a dedicated easement and occur adjacent to Graham Hill Road and Ocean Street in Scotts Valley and Santa Cruz respectively.

Background research was performed to evaluate species with potential to occur on site using USFWS IPaC species list (<https://ecos.fws.gov/ipac>) and the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB, December 2016) (Appendix A. Figures 5 and 6). Additional information was obtained from The Calflora Database (<http://www.calflora.org/>) and Jepson Flora Project (<http://ucjeps.berkeley.edu/eflora/>). (All accessed December 2016). Plant bloom periods were accessed from the California Native Plant Society listed online at <http://www.rareplants.cnps.org/> (Accessed January 2017).

Focused surveys to determine the presence of special-status insect species with potential to occur on site were conducted by Dr. Richard Arnold in 2016. Stantec botanists also performed on site due diligence in January and April 2017. Site visits conducted by Dr. Arnold, the PG&E Biologist, and Stantec biologists assessed site conditions, plant community structure, and potential for special-status wildlife species to occur near or within project work areas. Floristic surveys were completed in 2017.

3.1.1. Plants

Federal

The following plant species were evaluated for potential impacts. Species without habitat present or potential to occur are not evaluated further.

- **Ben Lomond Spineflower.** *Chorizanthe pungens* var. *hartwegiana*. FE, 1B.1. Identified during rare plant surveys in the work area.
- Ben Lomond (Santa Cruz) wallflower, *Erysimum teretifolium*, FE. SE, 1B.1: Habitat present, not observed during floristic surveys.
- Robust spineflower, *Chorizanthe robusta* var. *robusta*, FE, 1B.1: Habitat present, not observed during floristic surveys.
- **Santa Cruz tarplant,** *Holocarpha macradenia*, FT, SE, 1B.1. There is a CNDDDB occurrence that overlaps multiple sites along Graham Hill Road. Identified during rare plant surveys adjacent to (just outside the boundary of) the project area.
- White-rayed pentachaeta, *Pentachaeta bellidiflora*, FE, SE, 1B.1. There is a CNDDDB occurrence that overlaps all of the sites with a 5-mile radius. Habitat present, not observed during floristic surveys.

3.1.2. Wildlife (CNDDDB occurrences within a 2-mile radius of project area)

The following Federally listed wildlife species are evaluated for impacts. Species without potential to occur on site are not evaluated further.

- California red-legged frog, *Rana draytonii*, FT, SSC: Highly marginal habitat present, not likely to occur.
- Coho salmon Central California Coast ESU, *Oncorhynchus kisutch*, FE, SE: No habitat present, no potential to occur.
- **Mount Hermon June beetle,** *Polyphylla barbata*, FE: Habitat present, high potential to occur. Known occurrences within project work areas.
- Ohlone tiger beetle, *Cicindela ohlone*, FE: No habitat present, no potential to occur. Dr. Richard Arnold does not expect the Ohlone Tiger Beetle to occur in any of the vegetation management project sites along Graham Hill Road that are characterized by Watsonville loams (Arnold 2016).
- Steelhead Central California Coast DPS, *Oncorhynchus mykiss irideus*, FT: No habitat present, no potential to occur.
- Tidewater goby, *Eucyclogobius newberryi*, FE, SSC: No habitat present, no potential to occur.

- Western snowy plover, *Charadrius alexandrinus nivosus*, FT, SSC: No habitat present, no potential to occur. Work is being completed outside of nesting season.
- White-tailed kite, *Elanus leucurus*, FP: Habitat present, low potential to occur. Pre-activity nesting bird surveys will occur if work takes place during nesting season.
- Zayante Band-Winged Grasshopper, *Trimerotropis infantilis*, FE. ZBWG is not expected to occur in any of the work areas as none of the project sites that are underlaid by Zayante sands are characterized by open sand parkland vegetation (Arnold 2016).

3.1.3. Vegetation Communities

Several natural vegetation communities were identified within the vegetation removal sites including: Coast Live Oak Woodland, Mixed Evergreen/Chaparral, Riparian Woodland, Mixed Conifer/Redwood, Coastal Prairie, and Ruderal/Ornamental. Each habitat also contains a list of project sites that exhibit that habitat (sites may be listed in more than one category).

All work sites are along either Graham Hill Road or Ocean Street Extension and possess some ruderal qualities commonly found along roads. A majority of the sites are also within residential areas that contain some vegetation (mostly ornamentals) planted for landscape purposes. Three sites (RW-V-12221_14, RW-V-12222_14, and RW-V-12223_14) contain some woodland areas but again are adjacent to the roadway and are somewhat ruderal in nature. A few of the sites also contain open grassland areas that again are somewhat ruderal and disturbed by human use.

Coast Live Oak Woodland

This habitat type is characterized as oak forests with dense or spreading canopies among intervening arid grasslands. Representative overstory species include: coast live oak (*Quercus agrifolia*), interior live oak (*Quercus wislizeni*), madrone (*Arbutus menziesii*), toyon (*Heteromeles arbutifolia*), and California bay laurel (*Umbellularia californica*). Woodland understories may be dominated by herbs and shrubs such as: poison oak (*Toxicodendron diversilobum*), Himalayan blackberry (*Rubus discolor*), California coffeeberry (*Rhamnus californica*), and a variety of exotic annual grassland species including: wild oats (*Avena fatua* and *Avena barbata*), soft chess (*Bromus hordeaceus*), ripgut grass (*Bromus diandrus*), Italian ryegrass (*Lolium multiflorum*), Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), bur clover (*Medicago polymorpha*), and filaree species (*Erodium* spp.).

Mixed Evergreen/Chaparral

This habitat classification was used for sites that contain the typical oak woodland overstory species (noted above) but are more sparsely populated with lower levels of canopy cover. Other differences are that these sites contain Ponderosa pine (*Pinus ponderosa*), Douglas fir (*Pseudotsuga menziesii*), and chinquapin (*Crysolepis chrysophylla*), as well as a mixture of common chaparral or coastal scrub understory species such as coyote brush (*Baccharis pilularis*), manzanita (*Arctostaphylos* spp.), buckbrush (*Ceanothus cuneatus*), chamise (*Adenostoma fasciculatum*) and the invasive French broom (*Genista monspessulana*). Ponderosa pine (*Pinus ponderosa*) in this region occurs as open, park-like stands on Zayante soils with an herbaceous understory or as an overstory to maritime chaparral (USFWS 1997).

Riparian Woodland

Habitats classified as riparian woodlands were those that included woody plant species that typically occur in wet areas along streams, marshes or perennial drainages. Characteristic overstory species include: red alder (*Alnus rubra*), big leaf maple (*Acer macrophyllum*), sycamore (*Platanus racemosa*), cottonwood (*Populus fremontii*), box elder (*Acer negundo*), elderberry (*Sambucus mexicana*), creek dogwood (*Cornus californica*), and willow (*Salix spp.*). Non-native acacia trees are also prevalent in this habitat in the project area, although not generally associated with riparian habitats. Eagle Creek and Zayante Creeks are present near RW-V-12244_14, and site RW-V-8461_15 and are outside the work locations.

Mixed Conifer/ Redwood

This habitat was classified as areas with dense forest dominated by redwood (*Sequoia sempervirens*), tan oak (*Notholithocarpus densiflorus*), Douglas fir (*Pseudotsuga menziesii*), and California bay laurel (*Umbellularia californica*). Common understory species include: California hazelnut (*Corylus cornuta*), thimbleberry (*Rubus parviflorus*), various fern species, and the following invasive species: Himalayan blackberry (*Rubus discolor*), English ivy (*Hedera helix*), and periwinkle (*Vinca major*). This habitat type was found in transitional zones between oak woodland habitat and redwood dominated stands outside of the project site.

Coastal Prairie

This habitat was classified as open grassland with a large component of native species. Dominant native grass species such as purple needle grass (*Nassella pulchra*), meadow barley (*Hordeum brachyantherum*), and tufted hairgrass (*Deschampsia cespitosa*). Non-native grass species also occurred in lower quantities, with species such as Italian ryegrass (*Festuca perene*), soft chess brome (*Bromus hordeaceus*), and foxtail barley (*Hordeum murinum*). This habitat type was found in transitional zones between oak woodland habitat and chaparral.

Ruderal/ Ornamental

Areas classified as Ruderal/Ornamental are those that have been previously altered (trees removed) leaving little to no vegetation. These areas are dominated by invasive ruderal species such as: iceplant (*Carpobrotus edulis*), French broom (*Genista monspessulana*), and acacia that have colonized after disturbance or site has been planted with ornamentals associated with a residence.

3.2 *Covered Species*

The Mount Hermon June beetle is the only Federally listed wildlife and fish species with the potential to occur at 28 of the work locations and to be incidentally taken because of the proposed project as described below (Arnold 2016).

Mount Hermon June Beetle (MHJB)

The Mount Hermon June beetle (MHJB) is a member of the beetle family Scarabaeidae. The genus *Polyphylla* consists of over 30 species in North America that are commonly referred to as May or June beetles since the adult flight season usually includes one or both of these months (Arnold 2016).

The MHJB was listed in 1997 as an endangered species by USFWS (USFWS 1998). The beetle is threatened by sand mining, urban development, agricultural conversion, equestrian use, recreational activities, alteration in natural fire regimes, and/or competition with nonnative vegetation (USFWS 1998). Overcollection and pesticide use are potential threats to the insect species (Arnold 2016). Very low numbers of individuals and populations of some of these species put them at great risk of extinction due to random naturally occurring events (Arnold 2016).

MJHB adults are typically active between mid-May and mid-August (Arnold 2016). There is one generation per year. Females are flightless, but males emerge from the soil at dusk and actively fly for about one hour in search of females. After they mate, the female burrows back into the sand to lay her eggs. Larvae burrow in the sand and may take as long as two or three years to complete their development. During this period, they feed on the roots of various trees, shrubs, forbs, and grasses (USFWS 1998; Arnold 2016).

Adult males of the MHJB measure about 0.75 inch in length, while females are slightly longer but possess smaller antennal clubs than males. The adult male has a black head and dark brown elytra (leathery forewings) that are covered with brown setae (hairs). The elytra also have stripes that are broken and irregular rather than continuous and well-defined as in related species of June beetles. The larvae are grub-shaped (scarabaeiform) and vary in color from cream to pale yellow for the body segments and darker brown for the head (Arnold 2016).

In some instances, multiple soil types occurred at a location. Zayante sands occurred at 28 of the surveyed locations, Watsonville loam is known from 10 locations, and Elkhorn sandy loam occurs at four sites (Table 2) (Arnold 2016).

Dr. Richard Arnold has previously conducted presence-absence surveys for the MHJB at various properties along Graham Hill Road and found the beetle at numerous locations (Arnold 2016). Although project RWV-12263 is characterized by Elkhorn sandy loam it is also a known MHJB location based on prior survey results (Arnold 2016). Thus, based on Dr. Arnold's assessment of the work locations, all 28 sites with Zayante sands and one site with Elkhorn sandy loam represent actual or potentially suitable habitat for the MHJB (Figures 2-4; Table 1; Table 2).

The MHJB is known only from the Zayante Sandhills region of Santa Cruz County, CA. The MHJB occurs widely throughout the Zayante Sandhills. Dr. Richard Arnold has personally observed the beetle at approximately 200 locations (Arnold 2016). The MHJB is found associated with the following native plant communities: silverleaf manzanita chaparral with Ponderosa Pine, Ponderosa Pine forest, dense sand parkland, open sand parkland, and mixed deciduous-evergreen forest. It can also be found in degraded remnants of these communities, as well as landscaped residential yards and ruderal habitats as the larvae feed on a variety of plant roots. Although most known MHJB locations are associated

with Zayante sands, it has also been observed in areas mapped as other sandy soils, notably Elkhorn sandy loams, especially when they are in close proximity to Zayante sands (Arnold 2016).

3.3 Other Plant Species

In addition to the MHJB, the Zayante Sandhills region is known to provide potential habitat for several other special status plant species, as discussed in section 3.1.1 above. Negligible impacts to these species are expected, as either suitable habitat is absent or impacts to Federally listed plant species will be avoided or minimized through the implementation of conservation measures such as pre-activity surveys, flagging of individuals for avoidance, and having a biologist on site (Table 3).

3.4 Federally Listed Plant Species

Where potential habitat was present, PG&E performed pre-activity floristic surveys during the correct blooming period in 2017 for Federally listed species (as well as some endemic species present in the Zayante Sandhills). PG&E will flag any Federally protected plants that are found during the survey for avoidance during work. With the implementation of conservation measures, negligible impacts have the potential to occur.

Table 3. Federally Listed Plant Species

The following Federally listed plant species have potential to occur in the work area:

Ben Lomond Spineflower:

Ben Lomond spineflower (*Chorizanthe pungens* var. *hartwegiana*) occurs in sandstone soils in the Santa

Ben Lomond spineflower	<i>Chorizanthe pungens var. hartwegiana</i>	Endangered	-	1.B.1
Ben Lomond (Santa Cruz) wallflower	<i>Erysimum teretifolium</i>	Endangered	Endangered	1B.1
Robust Spineflower	<i>Chorizanthe robusta</i> var. <i>robusta</i>	Endangered	-	1B.1
Santa Cruz Cypress	<i>Hesperocyparis abramsiana</i> var. <i>abramsiana</i>	Threatened	Endangered	1B.2
Santa Cruz Tarplant	<i>Holocarpha macradenia</i>	Threatened	Endangered	1B.1
White-rayed Pentachaeta	<i>Pentachaeta bellidiflora</i>	Endangered	Endangered	1B.1

Cruz Mountains, from Boulder Creek south to Felton, and east to Quail Hollow Ranch in the Santa Cruz Mountains (USFWS). A CNDB query determined that Ben Lomond spineflower has been recorded within two miles of the project sites and could potentially be affected by activities within the project area. Sites within the project area where the substrate is comprised of the Zayante soil type have potential habitat for this species. Identified in the work area within RW-V-12251-14, and in between RW-V-12246-14 (southern boundary) and RW-V-12244-14 (northern boundary). The plant is an annual and will have set seed by the time that project activities will occur. As no soil is being removed to perform vegetation removal work, the seedbank will not be affected and the plant is not anticipated to be impacted by vegetation removal activities. The area where the plants were observed in 2017 will be flagged for avoidance and, where possible crews will limit activities within this area to the extent safely possible. With the implementation of conservation measures, negligible impacts will occur.

Ben Lomond (Santa Cruz) Wallflower:

A CNDB query determined that Ben Lomond (Santa Cruz) wallflower has been recorded within two miles of the project sites and could potentially be affected by activities within the project area. Sites within the project area where the substrate is comprised of the Zayante soil type have potential habitat for this species; however, due to the disturbed nature of the site, this species has a low potential to occur and was not observed during 2017 floristic surveys. With the implementation of conservation measures, no impacts will occur.

Robust Spineflower:

There are three known occurrences of Robust spineflower within two miles of the project sites, one of which is along Graham Hill Road. This species is found in coastal scrub and cismontane woodland habitats. The project sites include marginal habitat areas, but due to the high level of disturbance this species has a low potential to occur, and was not observed during 2017 floristic surveys. With the implementation of conservation measures, no impacts will occur.

Santa Cruz Cypress

Santa Cruz Cypress is rare and only known from five localities in Santa Cruz County. This species was not observed during floristic surveys and is not listed on the planned removals associated with the projects. With the implementation of conservation measures, no impacts will occur.

Santa Cruz Tarplant:

There is a CNDD occurrence, dated 2001, that overlaps multiple sites along Graham Hill Road (RW-V-12215-12217, 12219, 12221-12224_14). This occurrence is presumed extant and is described as 550 plants observed in 2001. This species is found often in clay and sandy soils in coastal prairie, coastal scrub, and valley and foothill grassland habitats. Santa Cruz Tarplant was identified during rare plant surveys near the work area and located approximately 35 feet west of Site RW-V-12219-14. With the implementation of avoidance measures, no impacts will occur. With the implementation of conservation measures, negligible impacts will occur.

White-rayed Pentachaeta:

There is a CNDD occurrence, dated April 1933, that overlaps all of the sites as it has a 5-mile radius. This occurrence is considered possibly extirpated and is described from the 1933 Armstrong Collection with the notes of occurring along beach cliffs near Santa Cruz. This species is found in cismontane woodlands and valley and foothill grasslands (often serpentinite). The project sites include marginal grassland and woodland areas, but, due to the high level of disturbance and development in the sites, this species only possesses a low potential to occur within the project area, and was not observed during 2017 floristic surveys. With the implementation of conservation measures, no impacts will occur.

Section 4. Potential Biological Impacts/Take Assessment

4.1 Mount Hermon June beetle (MHJB)

Direct and indirect effects are anticipated to occur from the removal of above-ground vegetation within each of the 28 work locations (Arnold 2016).

Temporary disturbance to the surface of the soil will occur in the area during vegetation removal activities although no excavation is proposed. These potential direct effects include soil compaction from vehicles and outriggers in some limited areas where it is not safely possible to perform all work from pavement, moving of the felled vegetation from foot traffic and a rubber tracked bobcat/ASV vehicle, and temporary erosion while the native seed establishes during restoration.

The MHJB spends up to three years as a subterranean larva feeding on the roots of various native and non-native plants (Arnold 2016). If the roots of any plants that the beetle larvae are feeding on are removed and/or die, this reduces sources of food for the MHJB. Repeated vegetation management activities over the same area to maintain the gas pipeline right-of-way after it is initially cleared is likely to cause repeated indirect effects to MHJB (Arnold 2016). However, since the larval stage of the MHJB feeds on the roots of various trees, shrubs, forbs, and grasses (USFWS 1998; Arnold 2016), the applicant proposes that methods taken to reduce impacts in the removal and treatment process (Project Description) reduces this impact in the following three ways: 1) grasses and forbs are not targeted in any of the three zones, 2) trees and woody shrubs are only targeted in the Pipe Zone, and 3) selected trees rising to the DBH requirement outlined in the Utility Standard are only targeted within the Outer and Border Zones. As a result, non-targeted species will persist within the work area and roots (food) associated with non-targeted species present in the Outer Zone and Border Zone may potentially extend underground into the Pipe Zone as well. As a result of measures implemented into the project design with the inclusion of reduced scope and included avoidance and conservation measures, it is anticipated that 2.9 acres of indirect and/or direct effects may occur within the project area.

Indirect take due to herbicide application is also a potential impact. Larvae of the MHJB are subterranean and feed for as long as 3 years to complete their development (Arnold 2017). At this time the full range of plant species upon whose roots they feed is not known, but the preliminarily available information suggests that the larvae are generalist root and fungi feeders (Hill and O'Malley 2010, Arnold 2017). Larval feeding information suggests that the MHJB is a generalist, feeding on trees, brush, and herbaceous plant roots, as well as fungi (Arnold 2017). Thus, any herbicide use that will kill the plants and their roots could indirectly kill larvae of the MHJB (Arnold 2017). As outlined in Section 2.2, to control the regrowth of trees all stumps will be treated with a California Department of Pesticide Regulations approved herbicide in accordance with the product label. On an annual basis all select regrowth will be treated with a targeted low volume foliar treatment using a California Department of Pesticide Regulations approved herbicide in accordance with the label. All applications will be made under the supervision of a California licensed Pest Control Advisor who shall issue a written Pest Control Recommendation.

Operations and Maintenance work could result in temporary indirect and direct effects to the MHJB through the potential for beetles to be crushed by vehicles, harmed during soil excavation, and temporary disturbance to soils during project work.

Both direct and indirect effects over the twenty year permit term will be fully mitigated through purchase of credits from a USFWS approved bank.

4.2 Anticipated Impacts on Covered Wildlife Species

According to Dr. Richard Arnold, both direct and indirect effects are likely to occur from the removal of the above-ground vegetation within project sites as the MHJB spends up to three years as a subterranean larva feeding on the roots of various plants. If roots of any plants that are removed die, this reduces sources of food for the MHJB (Arnold 2016). Utility standard (Section 2.1) prevents PG&E from replacing trees and shrubs within 5 feet of the pipeline and so the permanent removal of this vegetation above ground will constitute a removal of food sources (roots) within the 12 foot area (5 feet on either side of the pipeline plus the 2 feet above the pipeline) for the beetle. Therefore, we anticipate

that 2.9 acres of MHJB habitat would be affected to the extent that individuals within this area may experience indirect and direct effects, subsequently resulting in injury or mortality.

The beetle is expected to periodically recolonize the majority of the site and due to the limitations associated with the targeted vegetation, most of the non-targeted vegetation present within the assessment area will remain on the site to provide the beetle with food sources. PG&E is implementing avoidance measures to reduce direct impacts to the species (e.g. Not performing stump-grinding impacts to the soil or other ground disturbance, reducing impacts to only those required for the work, performing work from pavement wherever possible, and not performing work activities during the flight season for the beetle, having a biological monitor on site, etc.).

Due to the repeated impacts associated with maintaining these areas (e.g., addressing re-sprouting targeted vegetation, potential for additional removals through new vegetation recruitment into the treatment areas, herbicide application, removal of root systems for the beetle larvae, etc.), long term indirect effects on the species may occur as the beetle is likely to recolonize these areas after the initial work is completed. However, since the larval stage of the MHJB feeds on the roots of various trees, shrubs, forbs, and grasses (USFWS 1998; Arnold 2016), methods taken to reduce impacts in the removal and treatment process (Project Description) reduces this impact in the following three ways: 1) grasses and forbs are not targeted in any of the three zones, 2) trees and woody shrubs are only targeted in the Pipe Zone, and 3) selected trees rising to the DBH requirement outlined in the Utility Standard are only targeted within the Outer and Border Zones. As a result, non-targeted species will persist within the work area and roots (food) associated with non-targeted species present in the Outer Zone and Border Zone may potentially extend underground into the Pipe Zone as well. As a result of measures implemented into the project design with the inclusion of reduced scope and included avoidance measures, food sources will remain in the majority of the work areas following vegetation removal activities and the taking is incidental to the activities.

The impacts of incidental take have been minimized and mitigated to the maximum extent practicable. Measures that will be implemented to monitor, minimize, and mitigate impacts during vegetation removal, herbicide application, and minor temporary excavation have been proposed; funding will be made available to undertake such measures and comply with the HCP; and procedures to deal with unforeseen circumstances have been included in this document.

The taking will not appreciably reduce the likelihood of survival and recovery of the species in the wild due to the limited scope of the work and proximity of suitable habitat surrounding the project area following work. The beetle will also be able to recolonize the project area (soil) following work as no hardscape or building is proposed.

4.3 Anticipated Impacts on Plant Species

Negligible impacts on Federally listed plant species are anticipated. Pre-activity floristic surveys conducted during the blooming seasons for covered plant species took place in 2017. Conservation measures and pre-activity surveys will ensure minimal impacts to Federally listed plant species.

4.4 Effects on Critical Habitat

No Critical Habitat has been designated for the MHJB and so none can be affected. Critical Habitat has been designated for the ZBWG and occurs within the project work areas. However, project activities would not result in impacts to primary constituent elements of critical habitat for the ZBWG, therefore, no effects are anticipated.

4.5 Cumulative Impacts

PG&E is not aware of any other projects in the area at this time aside from a CALFIRE vegetation removal project that has been approved by the Service.

Section 5. Conservation Program

5.1 Biological Goals and Objectives

The biological goals and objectives of this proposed HCP include on site measures that avoid and minimize impacts to MHJB at the project site as well as off-site compensation.

Goal 1: Avoid and minimize impacts to the extent practical within the project work locations.

Objective 1: Ensure work activities are minimized to the extent to safely achieve project goals. Vegetation removal would occur above ground.

Objective 2: Work methods will be modified to not utilize stump grinding (unless required by the private landowner) and having crews park vehicles/equipment on pavement or disturbed areas to the extent safely possible to reduce impacts to the soils on site. Vegetation will also be removed from the site to ensure beetles can emerge from the soil and are not prevented from leaving the ground following work. Vegetation will not be left onsite unless PG&E is required to do so by the landowner.

Objective 3: Work will occur outside of the flight season for the MHJB to avoid impacts to dispersing beetles.

Objective 4: Revegetation of the temporarily disturbed areas will involve the use of native plant seed. All work areas would be temporarily disturbed and revegetated with native, weed-free seed indigenous to the Zayante Sandhills upon project completion.

Objective 5: All herbicide applications will be made under the supervision of a California licensed Pest Control Advisor who shall issue a written Pest Control Recommendation. Herbicide application will be targeted and will only be applied to stumps; herbicide will not be broadcast sprayed. Avoidance measures to limit spills will be implemented to avoid additional impacts to non-targeted areas.

Goal 2: Protect habitat at an off-site location at an approved conservation bank for the Mount Hermon June beetle.

Objective 1: Purchase conservation credits for an USFWS-approved offsite Conservation Bank for the MHJB, the Zayante Sandhills Conservation Bank. To offset vegetation removal impacts over a twenty year period within 2.9 acres of suitable habitat, PG&E will purchase 126,324 credits (2.9 acres) from the Zayante Sandhills Conservation Bank, a USFWS approved bank. Temporary impacts resulting from potential future maintenance and repair activities would also be compensated for through the purchase of conservation credits at a Service-approved conservation bank. We anticipate the need to compensate for these temporary impacts at a 1:1 ratio, in terms of impacts to credits purchased.

5.2 Avoidance, Minimization, and Mitigation Measures

The PG&E Gas Pipeline 1816-15 vegetation management projects along Graham Hill Road and Ocean Street in Santa Cruz County, CA will incorporate the following minimization and conservation measures into the project scope to compensate for impacts to the Mount Hermon June beetle (Table 4).

Fire Prevention/Suppression Measures

PG&E will perform vegetation removal between September 1st and April 30th to avoid impacts to dispersing MHJB during their flight season. In the event of drought or dry vegetation, the following measures will be implemented:

- No campfires or trash burning will be permitted.
- Smoking will be restricted to vehicle interiors or in approved smoking areas.
- All trash will be removed from the project work areas.
- Fire suppressant equipment will be present on site.
- Hand tools and shovels will be stocked inside vehicles.
- The vegetation contractor and biological monitor will each have a cellular phone to report immediately a fire to the proper authorities. In the event cellular service is limited in the work area, a designated individual will be assigned to drive to an area with service.

Migratory Bird Measures

PG&E will be performing vegetation removal between September 1st and April 30th due to beetle flight season restrictions and anticipates performing work outside the season for nesting birds.

- If work is scheduled to occur during the avian nesting season (February 15 through August 31), nest detection surveys will be conducted no more than 14 days before initial work activities at designated project areas to determine nesting status in the area. If active nests are observed, PG&E will follow the Avian Protection Plan and a PG&E biologist will provide species specific buffers for nest avoidance. If work cannot be completed within 14 days of a survey, work areas shall be resurveyed. Should an active bird nest be observed during work activities, all work shall cease and the PG&E Project Biologist shall be contacted for guidance.

General Measures

The following general measures will be implemented.

- Vegetation removal shall not exceed the minimum amount necessary to complete work.
- No impacts to wetlands or waterways may occur. Employ best management practices between work areas and waterways to ensure no impacts to waterways.
- For herbicide application, a California Department of Pesticide Regulations approved herbicide in accordance with the product label and shall be applied as described in this document under Section 2.1- Project Description.
- All herbicide applications will be made under the supervision of a California licensed Pest Control Advisor who shall issue a written Pest Control Recommendation.
- Herbicide best management practices for vegetation management will be followed to prevent spills.
- The container containing the herbicide will be kept in secondary containment and not placed directly on the soil.
- Ensure vegetation debris is felled away from creeks and waterways.
- Trees will be cut at the base above ground-level. The stump will be left unless PG&E is required to grind the stump due to safety or landowner requirements.
- Refueling of equipment will not occur within 100 feet of creeks or waterways.
- Parking will occur on pavement to the extent safely possible to achieve work goals.
- When accessing work sites, limit travel and parking of vehicles and equipment to pavement, existing roads, right of ways, and previously disturbed areas. Vehicles shall not exceed a speed limit of 15 mph when traveling off paved roads.
- Laydown and staging shall be conducted in previously developed or disturbed areas.
- Project activities shall minimize foot traffic and disturbance to the extent practicable.
- All trash shall be removed from the project site daily to prevent attracting wildlife to the project area.
- Before moving vehicles, chippers, and other heavy equipment, crews will look under tires to ensure no wildlife is present under tires.

Measures to Minimize Impacts to Mount Hermon June beetles (MHJB) and Federally Listed Plants

- Vegetation management work will not take place during the flight season for the beetle. Work will not occur between May 1st and August 31st. All vegetation removal will occur between September 1st and April 30th of any year;
- All vehicles and equipment will remain on paved surfaces unless vegetation work requires access on soil for safety;
- A biological monitor familiar with the identification of all stages of beetle will be present during all work activities to help identify appropriate access and work areas to minimize impacts to the Zayante Sandhills habitat;
- Prior to the start of work, all workers will participate in an educational awareness training session (tailboard) about the endangered insects and plants of the Zayante Sandhills, the Mount Hermon June beetle and measures implemented for work;
- If any life stages of the MHJB are encountered during the work, they will be salvaged by the Service-approved biologist and relocated to suitable habitat outside of the project's work area and access routes;
- All cut stumps will be left intact and not grinded down. Stump grinding will not occur unless PG&E is required to do so by the private landowner;
- To minimize soil disturbance, only foot traffic will be allowed off the paved roadway where safe to do so. If it is not safe to do so, the minimum number of vehicles will access the area to complete work safely;
- If erosion control measures are needed to stabilize the soil following work, they will utilize open-cell jute matting (>2" openings) or similar materials that allow MHJBs to readily enter and exit the soil;
- Straw wattles are not likely to be required on site unless stabilization concerns are present, but any straw wattles used on site will be minimized and not contain plastic monofilament (only coconut or jute shall be used);
- A qualified biologist will perform a preconstruction rare plant survey for Ben Lomond Spineflower and Santa Cruz Tarplant. GPS coordinates will be taken of any protected plants for later identification and flagging in the field. Immediately before work begins, the biologist will flag any protected plants identified during the pre-activity survey for avoidance; biologists will remove flagging at the completion of work;
- Removal work at the location with the noted occurrence of the Ben Lomond Spineflower and near the Santa Cruz Tarplant is planned to occur after the species have set seed. The area where the 2017 plants were identified during rare plant surveys will be flagged for avoidance and, where possible crews will limit activities within this area.

5.3 Measures to Mitigate Unavoidable Impacts

PG&E plans to purchase conservation credits for the MHJB from the Zayante Sandhills Conservation Bank as mitigation for its vegetation management project related impacts. PG&E is proposing to compensate at a 1:1 ratio. PG&E implemented measures into the project description to reduce impacts to the MHJB. PG&E will also re-seed the work areas following vegetation removal using a native, weed-free seed mix compatible with the Zayante Sandhills and the gas transmission pipeline utility standard.

The proposed seed mix is provided below. Note that species may be changed due to availability from vendor.

Common Name	Scientific Name	Seeding Rate (PLS) (lb./acre)
California brome	<i>Bromus carinatus</i>	3
California poppy	<i>Eschscholzia californica</i>	2
Tidy Tips	<i>Layia platyglossa</i>	1
Coyote mint	<i>Monardella villosa</i>	0.5
Dwarf plantain	<i>Plantago erecta</i>	1
Santa Cruz County monkeyflower	<i>Mimulus rattanii</i> var. <i>decurtatus</i>	0.5
Yarrow	<i>Achillea millefolium</i>	1

Table 4. Summary of Avoidance Measures and Biological Goals and Objectives Based on the Level of Impacts Resulting from Covered Activities

Covered Activity	Species Affected	Type of Impact (Take ¹ or Impact)	Quantify Take or Impact ²	Avoidance, Minimization, & Mitigation Measures
				Biological Goals and Objectives met
Vegetation Removal and indirect impacts associated with trimming/ removal of trees and vegetation and potential impacts associated with excavation for O&M activities	Mount Hermon June Beetle	Impacts will occur from the removal of above-ground vegetation within each project work location through potential crushing from equipment, repeated foliar treatment of the Pipe Zone and selected trees within the Border and Outer Zones, and loss of food sources for larvae.	2.9 acres	See above for Avoidance Measures and Mitigation proposed as well as Section 6.2.3.

¹Take as defined by the Act (e.g. Harassment, injury, mortality, etc.).

²Take can be expressed as a number of individuals or number of acres, assuming that a specified number of individuals may occur per acre.

5.4 Monitoring and Reporting

A post-activity compliance report will be prepared within 120 calendar days of project completion and will be forwarded to the Ventura Fish and Wildlife office. This report will detail the following information:

- A description of work performed during that year;
- Vegetation removal dates;
- Revegetation efforts including the seed mix used and documentation of compliance with the avoidance measures for the project;
- Pertinent information concerning the permittee's success in meeting the project AMMs;
- An explanation of failure to meet such measures, if any;
- Known project effects on Federally or state-listed species (if any);
- Occurrences of incidental take of Federally listed species (if any);
- Details of the temporary impacts including post-activity photo documentation,

- Need for additional adaptive management needs as identified, and
- Any additional pertinent information as determined by the PG&E biologist.

5.5 Performance and Success Criteria

The biological objective of this proposed HCP is to avoid and minimize effects to the MHJB which includes the purchase, manage, and protect in perpetuity 126,324 square feet (2.9 acres) of high quality MHJB habitat. Avoidance measures address the goal of avoiding and minimizing impacts to the extent practical within the project work locations. Restoring the sites using a native, weed-free seed addresses the potential for impacts of removal of food for the beetle.

PG&E proposes to compensate for impacts resulting from potential, future maintenance and repair activities through the purchase of conservation credits at a 1:1 ratio, in terms of impacts to credits purchased.

5.6 Adaptive Management Strategy

PG&E will mitigate impacts by purchasing conservation credits from the Service-approved Zayante Sandhills Conservation Bank. The conservation bank has an approved management plan which includes an adaptive management strategy.

Section 6. Plan Implementation

6.1 Implementation

Phasing of the project may be required due to crew availability, weather and traffic control limitations during the period of performance of the permit. Work will be constrained between September 1st and April 30th of any year. Restoration of the site may also occur after work is completed to take advantage of the rainy season.

6.2 Changed Circumstances

Section 10 regulations (69 *Federal Register* 71723, December 10, 2004 as codified in 50 Code of Federal Regulations (C.F.R.), Sections 17.22(b)(2) and 17.32(b)(2)) require that an HCP specify the procedures to be used for dealing with changed and unforeseen circumstances that may arise during the implementation of the HCP. In addition, the HCP No Surprises Rule [50 CFR 17.22 (b)(5) and 17.32 (b)(5)] describes the obligations of the permittee and the Service. The purpose of the No Surprises Rule is to provide assurance to the non-Federal landowners participating in habitat conservation planning under the ESA that no additional land restrictions or financial compensation will be required for species adequately covered by a properly implemented HCP, in light of unforeseen circumstances, without the consent of the permittee.

Changed circumstances are defined in 50 CFR 17.3 as changes in circumstances affecting a species or geographic area covered by an HCP that can reasonably be anticipated by plan developers and the Service and for which contingency plans can be prepared (e.g., the new listing of species, a fire, or other natural catastrophic event in areas prone to such event). If additional conservation and mitigation

measures are deemed necessary to respond to changed circumstances and these additional measures were already provided for in the plan's operating conservation program (e.g., the conservation management activities or mitigation measures expressly agreed to in the HCP), then the permittee will implement those measures as specified in the plan. However, if additional conservation management and mitigation measures are deemed necessary to respond to changed circumstances and such measures were not provided for in the plan's operating conservation program, the Service will not require these additional measures absent the consent of the permittee, provided that the HCP is being "properly implemented" (properly implemented means the commitments and the provisions of the HCP and the IA have been or are fully implemented). Foreseeable changed circumstances within the project area of this HCP include: the new listing of a species; and the discovery of another federally-listed species (Table 2) within the project area.

6.2.3. Maintenance and Operations

While no gas line maintenance and/or repair work is currently planned for the surveyed areas, PG&E recognizes that future pipeline maintenance and repair work may also need to occur within the surveyed work areas in MHJB habitat as a part of PG&E's pipeline safety program during the permit term. If operations and maintenance (O&M) construction needs to occur on the gas transmission pipelines within the surveyed areas covered in this permit, PG&E will notify USFWS with information that includes: 1) project area and location, 2) extent of impacts in square feet, 3) dates of scheduled repairs, 4) proposed conservation measures; and, 5) proposed conservation credit purchase to offset impacts. PG&E anticipates compensating for impacts associated with maintenance and repair activities at a 1:1 ratio, in terms of impacts to credits purchased. Examples of operation activities include inspecting, monitoring, testing, and operating valves, enclosures, switches, and other components. Examples of maintenance activities include repairing and replacing facilities and structures, access in addition to emergency repair and replacement. Examples of this type of work includes remedial maintenance, pipeline valve recoating, pipeline valve replacement, pipeline cathodic protection, pipeline recoating, pipeline inspection, strength testing, pipeline replacement, etc. and involves the following types of activities: grading, access, excavation, staging, boring, pipeline marking, stringing pipe, pipe placement, welding, clean up and restoration.

All Avoidance Measures proposed would be utilized and compensation for temporary acres impacted will be purchased at a 1:1 ratio. If work does need to be performed, PG&E will purchase credits for this O&M work at a 1:1 ratio in coordination with the Service due to the temporary nature of the work (e.g., pipeline repairs and maintenance) that does not result in permanent loss of habitat on site. PG&E would provide a notification to the Service that work needs to occur within these areas and provide AMMs that will be followed for work. Additional measures that may be implemented for this O&M work may include the following:

- During all vegetation clearing, excavation, and other ground disturbing activities a qualified biologist will survey for, capture, and relocate any life stages of the Mount Hermon June beetle that may be impacted by the proposed project. Any beetles captured or relocated would be reported to the Service in a report submitted to the Service (The report details will comply with Section 5.4 in terms of content).
- If Federally listed plant species are found in an area where O&M activities are planned to take place, if practicable, all seed would be collected from the subject plants to be used in post-project

restoration of the site.

- The top 6"-12" of topsoil will be separated and stockpiled separately. This topsoil will be placed back on site at the completion of the project.
- To prevent entrapment or burrowing of native wildlife, all open holes or trenches more than 2 feet deep will be covered at the close of each work day by plywood or similar materials. Escape ramps may also be used if deemed necessary.
- All work areas will be clearly identified in the field in coordination with the Service-approved biologist. Off-pavement portions of work areas will be surrounded by orange construction fencing.
- Open excavations will be inspected each morning for wildlife species, including the Mount Hermon June beetle, prior to the resumption of work.
- The site will be revegetated with native and weed-free seed upon completion of work.

6.2.4. Contingencies for Other HCP

In the event that PG&E seeks and receives an approved HCP that covers this area after this HCP is issued and includes coverage for the MHJB, the measures that are in the Company's other HCP would supersede the measures listed in this document.

6.2.5 Newly listed species

If a new species that is not covered by the HCP but that may be affected by activities covered by the HCP is listed under the Act during the term of the section 10(a)(1)(B) permit, the section 10 permit will be reevaluated by the Service. The HCP covered activities may be modified, as necessary, to insure that the activities covered under the HCP are not likely to jeopardize or result in the take of the newly listed species or adverse modification of any newly designated critical habitat. PG&E shall implement the modifications to the HCP covered activities identified by the Service as necessary to avoid the likelihood of jeopardy to or take of the newly listed species or adverse modification of newly designated critical habitat. PG&E shall continue to implement such modifications until such time as PG&E has applied for and the Service has approved an amendment of the Section 10(a)(1)(B) permit, in accordance with applicable statutory and regulatory requirements, to cover the newly listed species or until the Service notifies PG&E in writing that the modifications to the HCP covered activities are no longer required to avoid the likelihood of jeopardy of the newly listed species or adverse modification of newly designated critical habitat.

6.3 Summary of Circumstances

Section 10 regulations [(69 *Federal Register* 71723, December 10, 2004 as codified in 50 Code of Federal Regulations (C.F.R.), Sections 17.22(b)(2) and 17.32(b)(2))] require that an HCP specify the procedures to be used for dealing with changed and unforeseen circumstances that may arise during the implementation of the HCP. In addition, the HCP No Surprises Rule [50 CFR 17.22 (b)(5) and 17.32 (b)(5)] describes the obligations of the permittee and the Service. The purpose of the No Surprises Rule is to provide assurance to the non-Federal landowners participating in habitat conservation planning under the Act that no additional land restrictions or financial compensation will be required for species

adequately covered by a properly implemented HCP, in light of unforeseen circumstances, without the consent of the permittee.

6.4 Unforeseen Circumstances

Unforeseen circumstances are defined in 50 CFR 17.3 as changes in circumstances that affect a species or geographic area covered by the HCP that could not reasonably be anticipated by plan developers and the Service at the time of the HCP's negotiation and development and that result in a substantial and adverse change in status of the covered species. The purpose of the No Surprises Rule is to provide assurances to non-Federal landowners participating in habitat conservation planning under the Act that no additional land restrictions or financial compensation will be required for species adequately covered by a properly implemented HCP, in light of unforeseen circumstances, without the consent of the permittee.

In case of an unforeseen event, the permittee shall notify the Service staff as soon as practical. In determining whether such an event constitutes an unforeseen circumstance, the Service shall consider, but not be limited to, the following factors: size of the current range of the affected species; percentage of range adversely affected by the HCP; percentage of range conserved by the HCP; ecological significance of that portion of the range affected by the HCP; level of knowledge about the affected species and the degree of specificity of the species' conservation program under the HCP; and whether failure to adopt additional conservation measures would appreciably reduce the likelihood of survival and recovery of the affected species in the wild.

If the Service determines that additional conservation and mitigation measures are necessary to respond to the unforeseen circumstances where the HCP is being properly implemented, the additional measures required must be as close as possible to the terms of the original HCP and must be limited to modifications within any conserved habitat area or to adjustments within lands or waters that already set-aside in the HCP's operating conservation program. Additional conservation and mitigation measures shall involve the commitment of additional land or financial compensation or restrictions on the use of land or other natural resources otherwise available for development or use under original terms of the HCP only with the consent of the permittee.

Section 7. Amendments

7.1 Permit Amendments

At this time, there is no reason to expect that an amendment to the take permit will be needed to complete the proposed vegetation removal activities. However, during the specified permit period, an amendment of the Section 10(a) permit for the project would be required for any change in the following:

- significant revision of the permit area boundary;
- ESA listing of a species that is not currently addressed in the HCP that may be taken by project activities;

- modification of any important project action or mitigation component under the HCP, including funding, that may significantly affect authorized take levels, effects of the project, or the nature or scope of the mitigation programs; and
- any other modification of the project likely to result in significant adverse effects to MHJB not addressed in the original HCP and permit application.

Amendment of the Section 10(a) permit would be treated in the same manner as an original permit application. The specific documentation needed in support of a permit amendment may vary, depending on the nature of the amendment. This would be as discussed with USFWS to determine the nature of the documentation required. If the permit amendment also qualifies under a low-effect HCP, an Implementing Agreement and NEPA document would not be needed.

This HCP may, under certain circumstances, be amended without amending the associated permit, if such amendments are of a minor or technical nature and that the effect on the species involved and the levels of take resulting from the amendment are not significantly different from those described in the original HCP. Examples of minor amendments to the HCP that would not require permit amendment include, but are not limited to:

- minor revisions to the HCP's plan area or boundaries;
- minor changes to conservation bank planting site(s) and site preparation; and
- minor changes to survey, monitoring, or reporting protocols.

To amend the HCP without amending the permit, PG&E must submit to the USFWS, in writing, a description of:

- the proposed amendment;
- an explanation of why PG&E believes the effects of the proposed amendment would not be significantly different than those described in the original HCP.

If the USFWS concurs with PG&E's proposal, it shall authorize the HCP amendment in writing and the amendment shall be considered effective upon the date of the USFWS's written authorization.

7.2 Suspension/Revocation

The Service may suspend or revoke their respective permits if PG&E fails to implement the HCP in accordance with the terms and conditions of the permits or if suspension or revocation is otherwise required by law. Suspension or revocation of the Section 10(a)(1)(B) permit, in whole or in part, by the Service shall be in accordance with 50 CFR 13.27-28, 17.32 (b)(8).

7.3 Renewal of the Section 10(a)(1)(B) Permit

Upon expiration after 20 years of the time of issue, the Section 10(a)(1)(B) permit may be submitted for renewal without the issuance of a new permit, provided that the biological circumstances and other pertinent factors affecting covered species are not significantly different than those described in the original HCP. To renew the permit, PG&E shall submit to the Service, in writing:

- a request to renew the permit; reference to the original permit number;
- certification that all statements and information provided in the original HCP and permit application, together with any approved HCP amendments, are still true and correct, and inclusion of a list of changes;
- a description of any take that has occurred under the existing permit; and
- a description of any portions of the project still to be completed, if applicable, or what activities under the original permit the renewal is intended to cover.

If the Service concurs with the information provided in the request, it shall renew the permit consistent with permit renewal procedures required by Federal regulation (50 CFR 13.22). If PG&E files a renewal request and the request is on file with the issuing Service office at least 30 days prior to the permits expiration, the permit shall remain valid while the renewal is being processed, provided the existing permit is renewable. However, PG&E may not take listed species beyond the quantity authorized by the original permit or change the scope of the HCP unless otherwise authorized. If PG&E fails to file a renewal request within 30 days prior to permit expiration, the permit shall become invalid upon expiration. PG&E and the mitigation bank operator (if applicable) must have complied with all annual reporting requirements to qualify for a permit renewal.

7.4 Permit Transfer

In the unlikely event of a sale or transfer of ownership of the property during the life of the permit, the new owner(s) of the pipeline will seek their own take permits.

7.5 Authorizing Take Associated With Mitigated Activities

As described above, certain elements of the Vegetation Removal project could result in take of MHJB. For purposes of such mitigation or management activities, the ESA Section 10(a)(1)(B) permit issued pursuant to this HCP will authorize the take of MHJB during such activities provided that: 1) such take is specifically intended to satisfy mitigation measures described in this HCP or to minimize more serious forms of take (i.e., killing/injury); 2) such take is directly associated in time and place with activities authorized under the permit; 3) such activities are conducted under the supervision of a qualified biologist; and 4) the USFWS authorizes the applicant to proceed.

Section 8. Funding

8.1 Costs of HCP Implementation

Costs of HCP implementation are estimated at \$821,235.88 with \$552,035.88 of the cost being a one-time mitigation cost (Table 5).

Table 5. Costs of HCP Implementation

Item/Activity	Unit Cost	Year One	Re-occurring Cost Totals	Total
				(x # of years)
Biological Monitor	~\$1200/day	\$24,000	\$115,200	Total of 20 days for initial work. Estimated monitoring for repeated treatment at 4 days for 19 years (= 96 days).
Crew Tailboard Training	\$1,500	\$1,500	\$28,500	1 training/year
Reporting	Post-Work Report	\$5,000	\$5000 each year, if required, for total of \$100,000	1 report estimated per year over 20 year period
Mitigation Bank Cost)	-	\$552,035.88	-	One time cost.

8.2 Funding Source

In the fall of 2016, PG&E approved all the funds necessary to implement this project. Pending permit approval it is anticipated that all vegetation removal will be completed by the end of 2017 or early 2018.

Funding for all aspects of the HCP will be included in PG&E's approved Capital Projects Budgets for the Community Pipeline Safety Initiative. PG&E understands that failure to provide adequate funding, and a consequent failure to implement the terms of this HCP in full, could result in temporary permit suspension or permit revocation.

8.3 Funding Mechanism and Management

PG&E has purchased conservation credits from a USFWS-approved offsite Conservation Bank for the MHJB, the Zayante Sandhills Conservation Bank. To offset the 2.9 acres of affected area for vegetation removal, PG&E purchased 126,324 credits (2.9 acres) from the Zayante Sandhills Conservation Bank, a USFWS approved bank, at a cost of \$552,035.88.

Section 9. Alternatives

9.1 Summary

Section 10(a)(2)(A)(iii) of the Endangered Species Act of 1973, as amended, [and 50 CFR 17.22(b)(1)(iii) and 17.32(b)(1)(iii)] requires that alternatives to the taking of species be considered and reasons why such alternatives are not implemented be discussed.

9.2 No Action Alternative

A *No Action* alternative means the USFWS would not issue an incidental take permit to PG&E as proposed. PG&E is responsible for funding and maintaining its natural gas transmission lines throughout California. Part of this responsibility is to ensure that incompatible vegetation present is removed to ensure safe, reliable natural gas is delivered to its customers. PG&E developed Utility Standard TD-4490S (Section 2) for maintaining gas pipeline rights-of-way to comply with federal law that requires the management of vegetation within gas transmission rights-of-way for thorough and complete leak detection and cathodic surveys. Vegetation within PG&E's gas transmission easements pose problems with surveying the lines for leaks, as well as patrolling the lines for signs of encroachment or damage from erosion, landslide, or other natural forces. Additionally, tree roots can grow around steel pipelines and damage their protective coating, which increases risks for corrosion and leakage. Trees present within our rights-of-way could also result in emergency access delays, which could prolong incidents or outages in the event a pipeline is damaged or a leak develops. Eliminating the vegetation removal activities necessary to maintain the transmission line system would eliminate the potential take of any MHJB located in project work areas. However, PG&E would then not be able to ensure a safe and reliable natural gas supply to its Santa Cruz County customers including local schools (San Lorenzo Valley High, San Lorenzo Valley Elementary, and Scotts Valley Middle School) as well as critical businesses and services. Not removing these trees could put the public's health, welfare, and safety at risk and could result in substantial damage to PG&E's gas transmission system. PG&E is mandated by the California Public Utility Commission to provide adequate, safe levels of energy to meet the gas service demands of its customers. PG&E has considered this alternative and has found that it is not viable due to the public safety risks described.

9.3 Reduced Scope (Proposed Action)

Under the proposed action alternative, PG&E would implement the project as described in Section 2. The proposed action will require the issuance of a Section 10(a)(1)(B) permit in order for the project to be implemented in compliance with the federal Endangered Species Act. The project could cause mortality to individuals potentially occurring in the 2.9 acre action area. The proposed action would provide for greater conservation benefits to the species that would result from the no action alternative and original project alternative. Specifically, under the proposed action, PG&E will permanently protect 2.9 acres of high quality habitat for the species through the purchase of conservation credits at the Zayante Sandhills Conservation Bank. Additionally, the proposed action meets the needs of PG&E by reducing potential hazards from the existing natural gas pipeline. Therefore, the proposed action is the preferred alternative.

9.4 Original Scope

PG&E's original plan was to remove all trees and woody vegetation within a 30 foot corridor (14 feet on either side of the pipeline plus the 2 feet directly above the pipeline) to comply with the Utility Standard, chip all vegetation on site, and leave all woodchips on site. This Alternative was rejected because of the greater impact of the removals on the MHJB (i.e., a greater loss of beetle larvae food sources (roots), and because the woodchips could result in a barrier to beetles emerging from the soil.

Section 10. Literature Cited

Arnold, R.A (2016). PG&E's 40 Vegetation Management Projects Along Graham Hill Road & Ocean Street in Santa Cruz (Santa Cruz County), CA. Habitat Assessment Survey for the Endangered Mount Hermon June Beetle, Zayante Band Wing Grasshopper, and Ohlone Tiger Beetle. Prepared for PG&E. September 7, 2016.

Arnold, R.A. (2017). PG&E's 40 Vegetation Management Projects Along Graham Hill Road & Ocean Street in Santa Cruz (Santa Cruz County), CA. Potential Effects of Herbicide Treatment on the Endangered Mt. Hermon June Beetle. Prepared for PG&E.

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USFWS IPaC species list (<https://ecos.fws.gov/ipac>) (Accessed December, 2016).

Cc: Tasha Robbins[Tasha_I_Robbins@ios.doi.gov]
To: Aurelia Skipwith[aurelia_skipwith@ios.doi.gov]
From: rich@pacificcommllc.com
Sent: 2018-04-24T08:27:51-04:00
Importance: Normal
Subject: [EXTERNAL] Wednesday, 1:00 pm
Received: 2018-04-24T08:28:14-04:00

Aurelia - We're looking forward to meeting with you tomorrow. Our group includes 7 people, and contains the general managers of the three more active and larger irrigation districts in the Deschutes Basin; North Unit Irrigation District (Mike Britton), Central Oregon Irrigation District (Craig Horrell) and Tumalo Irrigation District (Ken Rieck).

Our focus is on the completion of the Deschutes Basin Habitat Conservation Plan, and federal funding to cost-share our water conservation and fish and wildlife habitat restoration measures. A brief background on both issues follows. Please call if you would like to discuss these issues before tomorrow's meeting. My cell is (503) 807-8307.

The Deschutes Basin Habitat Conservation Plan

The Deschutes HCP is a collaborative conservation strategy to protect and restore habitat for 5 species in 340 miles of rivers and streams. The 9 applicants represent over 150,000 acres of farms, ranches and the City of Prineville. The HCP is scheduled for completion in July 2019; all of the field work and studies are complete, the NEPA process is underway, including preparation of an EIS, and the draft conservation measures were shared with stakeholders in a December 2017 public meeting. As required by the USFWS biological opinion and incidental take statement, the Districts and USBR are monitoring Oregon spotted frog (OSF) habitat conditions and are committing water supplies to support OSF habitat needs. The HCP will include a long-term conservation strategy, monitoring program, and OSF adaptive management plan.

Fiscal Year 2019

The Administration's budget recommendation includes significant cuts to several programs important to the Deschutes Basin Board of Control (these three districts and five others), including no funding for USDA's P.L. 566 program and a deep cut to Reclamation's WaterSMART grant program. The Administration did not provide an explanation for zeroing out USDA's Watershed Protection and Flood Prevention Program (P.L. 83-566), however. The Administration also reduced their recommended level of funding for USBR's WaterSMART program by over \$18 M, to a level of \$10 M.

Richard K. Golb
PacificComm LLC
201 NE Park Plaza Drive Ste 269
Vancouver WA 98684
360.397.0248

Cc: Tasha Robbins[Tasha_I_Robbins@ios.doi.gov]
To: Aurelia Skipwith[aurelia_skipwith@ios.doi.gov]
From: rich@pacificcommllc.com
Sent: 2018-04-24T08:37:59-04:00
Importance: Normal
Subject: [EXTERNAL] Re: Wednesday, 1:00 pm
Received: 2018-04-24T08:39:57-04:00
[Conservation Update - April, 2018.pdf](#)
[ATT00001.htm](#)

Aurelia - I should have sent this summary of our conservation work as well in the previous email.



Active PL 83-566 Funded Conservation Projects

PROJECT	TOTAL COST	PL 83-566 FUNDS	APPROXIMATE PIPE	WATER SAVED	ESTIMATED COMPLETION
Smith Rock & King Way CENTRAL OREGON	\$40M	\$17.26M	37,200 ft	31 cfs	March 2022
Rogers & Rogers Sub SWALLEY	\$2.5M	\$1.89M	16,000 ft	2.3 cfs	March 2019
Tumalo Feed Canal VB TUMALO	\$9.2M	\$4.84M	14,560 ft	8.35 cfs	March 2019

These projects enable Central Oregon Irrigation District, Swalley Irrigation District, and Tumalo Irrigation District to convert open irrigation canals to piped and pressurized systems, improving the efficiency of each district for the benefit of local farmers, ranchers, homeowners, and the environment. Transitioning to underground piped systems also allows for water conservation of up to 20% through on-farm efficiencies. On-farm efficiencies are defined as improvements past the point of delivery - including private lateral and on-farm application methods. These projects are critical to conserving and improving the Deschutes River, Little Deschutes River, Tumalo Creek, Crescent Lake, and Crescent Creek, as well as restoring and protecting habitat for Oregon spotted frog, steelhead trout and Chinook salmon.

TO LEARN
MORE

FCA's Irrigation Modernization Program works with irrigation districts to develop and implement modernization strategies.
IRRIGATIONMODERNIZATION.FCASOLUTIONS.ORG 541.716.6085 • info@fcasolutions.org

Cc: Tasha Robbins[Tasha_I_Robbins@ios.doi.gov]
To: Aurelia Skipwith[aurelia_skipwith@ios.doi.gov]
From: rich@pacificcommllc.com
Sent: 2018-04-24T08:37:59-04:00
Importance: Normal
Subject: [EXTERNAL] Re: Wednesday, 1:00 pm
Received: 2018-04-24T08:38:19-04:00
Conservation Update - April, 2018.pdf

Aurelia - I should have sent this summary of our conservation work as well in the previous email.

Richard K. Golb
PacificComm LLC
201 NE Park Plaza Drive Ste 269
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360.397.0248

On Apr 24, 2018, at 8:27 AM, rich@pacificcommllc.com wrote:

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IRRIGATIONMODERNIZATION.FCASOLUTIONS.ORG 541.716.6085 • info@fcasolutions.org

To: 'Skipwith, Aurelia'[aurelia_skipwith@ios.doi.gov]; Guala, Gerald[gguala@usgs.gov]
Cc: Mitchell, David[MitchellD@si.edu]; Nicolson, David[NICOLSOD@si.edu]; Cheryl A Morris[cmorris@usgs.gov]; Annie Simpson[asimpson@usgs.gov]
From: Orrell, Thomas
Sent: 2018-04-25T06:05:28-04:00
Importance: Normal
Subject: [EXTERNAL] RE: Taxonomy - Sea Urchins and Sea Cucumbers
Received: 2018-04-25T06:05:38-04:00

Dear Aurelia,

I am happy to discuss with you today. I am available most of the morning. Please feel free to call my office (202-633-2151) anytime between now and noon EST.

Kind regards,

Thomas M. Orrell, Ph.D.
Research Biologist
Deputy Director ITIS/Informatics Branch Chief
Smithsonian Institution PO Box 37012
National Museum of Natural History, MRC-136
Washington, DC 20013-7012

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Washington, DC 20560-0153

From: Skipwith, Aurelia <aurelia_skipwith@ios.doi.gov>
Sent: Tuesday, April 24, 2018 6:01 PM
To: Guala, Gerald <gguala@usgs.gov>
Cc: Orrell, Thomas <Orrellt@si.edu>; Mitchell, David <MitchellD@si.edu>; Nicolson, David <NICOLSOD@si.edu>; Cheryl A Morris <cmorris@usgs.gov>; Annie Simpson <asimpson@usgs.gov>
Subject: Re: Taxonomy - Sea Urchins and Sea Cucumbers

Thank you, Gerald. I wish you the best [REDACTED] (b) (6) [REDACTED].

Dr. Orrell, would you be available tomorrow for a call? Thank you.

Aurelia Skipwith
Deputy Assistant Secretary
for Fish and Wildlife and Parks

U.S. Department of Interior
1849 C Street, NW, Room 3148
Washington, DC 20240
(202) 208-5837

NOTE: Every email I send or receive is subject to release under the Freedom of Information Act.

On Tue, Apr 24, 2018 at 5:39 PM, Guala, Gerald <guala@usgs.gov> wrote:
Deputy Assistant Secretary Skipwith,

Thank you for contacting me on this. Unfortunately, [REDACTED] (b) (6) will not be available, but my staff at ITIS are the definitely the experts in this area and will be happy to help you. Dr. Tom Orrell, the Deputy Director of ITIS, is a well known marine taxonomist and co-author of our high level classification of the major groups of all of life.

Sincerely,
Stinger Guala

Gerald "Stinger" Guala, Ph.D.
Branch Chief, Eco-Science Synthesis
Director of Biodiversity Information Serving Our Nation (BISON)
Director of the Integrated Taxonomic Information System (ITIS)
Core Science Analytics, Synthesis and Libraries
Core Science Systems
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12201 Sunrise Valley Drive, MS 302
Reston, VA 20192
Fax: 703 648-4224
Mobile: 703 927-0429
USGS Office: 703 648-4311
Smithsonian Office: 202 633-0180
Mobile is preferred for voicemail.

On Tue, Apr 24, 2018 at 3:55 PM, Skipwith, Aurelia <aurelia_skipwith@ios.doi.gov> wrote:
Gerald,

Andrea mentioned that you are well versed in taxonomy. I'm working on a clarifying a definition via rule-making about the taxonomic classification of sea urchins and sea cucumbers.

Under the Endangered Species Act, shellfish and fishery products are exempted from import and export regulation and inspection. In the Fish and Wildlife Service regulations - 50 CFR Parts 10 and 14, the Service held that sea urchins, sea cucumbers, and others are not exempt, because these species are not echinoderms, because they lack a shell and therefore, these species cannot be exempted under shellfish or fishery products designation. In working with the Solicitors, they had a dictionary definition that defined sea urchins and sea cucumbers as echinoderms. I need your assistance in the scientific classification of echinoderms, sea cucumbers, sea urchins, and shellfish. I could provide more background.

Would you have availability tomorrow? Thank you.

Aurelia Skipwith

Deputy Assistant Secretary
for Fish and Wildlife and Parks

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1849 C Street, NW, Room 3148
Washington, DC 20240
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To: 'Aurelia Skipwith'[aurelia_skipwith@ios.doi.gov]
From: Orrell, Thomas
Sent: 2018-04-25T07:18:24-04:00
Importance: Normal
Subject: RE: [EXTERNAL] RE: Taxonomy - Sea Urchins and Sea Cucumbers
Received: 2018-04-25T07:18:33-04:00

I look forward to the conversation.

I do have one point of clarification in your original email.

You wrote, "In the Fish and Wildlife Service regulations - 50 CFR Parts 10 and 14, the Service held that sea urchins, sea cucumbers, and others are not exempt, because these species are not echinoderms, because they lack a shell and therefore, these species cannot be exempted under shellfish or fishery products designation."

Did you mean to say that the species "are echinoderms" above?

Thomas M. Orrell, Ph.D.
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From: Aurelia Skipwith <aurelia_skipwith@ios.doi.gov>
Sent: Wednesday, April 25, 2018 6:19 AM
To: Orrell, Thomas <Orrellt@si.edu>
Cc: Guala, Gerald <gguala@usgs.gov>; Mitchell, David <MitchellD@si.edu>; Nicolson, David <NICOLSOND@si.edu>; Cheryl A Morris <cmorris@usgs.gov>; Annie Simpson <asimpson@usgs.gov>
Subject: Re: [EXTERNAL] RE: Taxonomy - Sea Urchins and Sea Cucumbers

Thank you for your quick response. I will call at 10am.

Aurelia Skipwith
Deputy Assistant Secretary
for Fish and Wildlife and Parks

U.S. Department of Interior
1849 C Street NW, Room 3148
Washington, DC 20240
202-208-5837

On Apr 25, 2018, at 6:05 AM, Orrell, Thomas <Orrellt@si.edu> wrote:

Dear Aurelia,

I am happy to discuss with you today. I am available most of the morning. Please feel free to call my office (202-633-2151) anytime between now and noon EST.

Kind regards,

Thomas M. Orrell, Ph.D.

Research Biologist
Deputy Director ITIS/Informatics Branch Chief
Smithsonian Institution PO Box 37012
National Museum of Natural History, MRC-136
Washington, DC 20013-7012

Phone: +1 202 633-2151

Cell: +1 202-294-0514

Fax: +1 202-633-9562

Email: orrellt@si.edu

URLS: <http://www.itis.gov>

<http://collections.nmnh.si.edu>

For UPS and FedEx shipments please use:
National Museum of Natural History, MRC-136
10th and Constitution Avenues, NW
Washington, DC 20560-0153

From: Skipwith, Aurelia <aurelia_skipwith@ios.doi.gov>
Sent: Tuesday, April 24, 2018 6:01 PM
To: Guala, Gerald <guala@usgs.gov>
Cc: Orrell, Thomas <Orrellt@si.edu>; Mitchell, David <MitchellD@si.edu>; Nicolson, David <NICOLSON@si.edu>; Cheryl A Morris <cmorris@usgs.gov>; Annie Simpson <asimpson@usgs.gov>
Subject: Re: Taxonomy - Sea Urchins and Sea Cucumbers

Thank you, Gerald. I wish you the best [REDACTED] (b) (6) [REDACTED].

Dr. Orrell, would you be available tomorrow for a call? Thank you.

Aurelia Skipwith
Deputy Assistant Secretary
for Fish and Wildlife and Parks

U.S. Department of Interior
1849 C Street, NW, Room 3148
Washington, DC 20240
(202) 208-5837

NOTE: Every email I send or receive is subject to release under the Freedom of Information Act.

On Tue, Apr 24, 2018 at 5:39 PM, Guala, Gerald <gguala@usgs.gov> wrote:
Deputy Assistant Secretary Skipwith,

Thank you for contacting me on this. Unfortunately, (b) (6) will not be available, but my staff at ITIS are the definitely the experts in this area and will be happy to help you. Dr. Tom Orrell, the Deputy Director of ITIS, is a well known marine taxonomist and co-author of our high level classification of the major groups of all of life.

Sincerely,
Stinger Guala

Gerald "Stinger" Guala, Ph.D.
Branch Chief, Eco-Science Synthesis
Director of Biodiversity Information Serving Our Nation (BISON)
Director of the Integrated Taxonomic Information System (ITIS)
Core Science Analytics, Synthesis and Libraries
Core Science Systems
U.S. Geological Survey
12201 Sunrise Valley Drive, MS 302
Reston, VA 20192
Fax: 703 648-4224
Mobile: 703 927-0429
USGS Office: 703 648-4311
Smithsonian Office: 202 633-0180
Mobile is preferred for voicemail.

On Tue, Apr 24, 2018 at 3:55 PM, Skipwith, Aurelia <aurelia_skipwith@ios.doi.gov> wrote:
Gerald,

Andrea mentioned that you are well versed in taxonomy. I'm working on a clarifying a definition via rule-making about the taxonomic classification of sea urchins and sea cucumbers.

Under the Endangered Species Act, shellfish and fishery products are exempted from import and export regulation and inspection. In the Fish and Wildlife Service regulations - 50 CFR Parts 10 and 14, the Service held that sea urchins, sea cucumbers, and others are not exempt, because these species are not echinoderms, because they lack a shell and therefore, these species cannot be

exempted under shellfish or fishery products designation. In working with the Solicitors, they had a dictionary definition that defined sea urchins and sea cucumbers as echinoderms. I need your assistance in the scientific classification of echinoderms, sea cucumbers, sea urchins, and shellfish. I could provide more background.

Would you have availability tomorrow? Thank you.

Aurelia Skipwith

Deputy Assistant Secretary
for Fish and Wildlife and Parks

U.S. Department of Interior
1849 C Street, NW, Room 3148
Washington, DC 20240
(202) 208-5837

NOTE: Every email I send or receive is subject to release under the Freedom of Information Act.

To: Skipwith, Aurelia[aurelia_skipwith@ios.doi.gov]
From: Alan Olson
Sent: 2018-04-25T15:32:16-04:00
Importance: Normal
Subject: [EXTERNAL] MPA meeting
Received: 2018-04-25T15:32:28-04:00

Good afternoon Aurelia

I am writing to check if you would be available to sit on a panel discussion on sage grouse and discuss the DOI position on state programs.

You would be tentatively interacting with our program consultant Dave Galt, Montana's Sage Grouse Program Director Carolyn Sime, and possibly an industry representative.

The day would be August 29th, location is Billings Double Tree Hotel.

Thanks,
Alan

Alan Olson, Executive Director
Montana Petroleum Association
PO Box 1186
Helena, Montana 59624

Telephone;
Office 406.442.7582
Cell 406.320.1385

Email alan@montanapetroleum.org
Website www.montanapetroleum.org



To: aurelia_skipwith@ios.doi.gov[aurelia_skipwith@ios.doi.gov]
From: Ed Arnett
Sent: 2018-04-26T11:21:52-04:00
Importance: Normal
Subject: [EXTERNAL] TRCP 4/26 BBQ
Received: 2018-04-26T11:22:05-04:00
[BBQ Save the Date \(5\).jpg](#)
[WGA Species Conservation and ESA Recommendations.pdf](#)

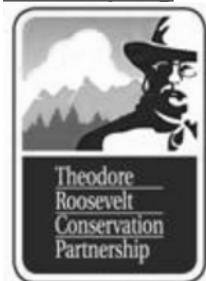
Hi Aurelia,

It was nice seeing you on Monday and I've attached those WGA ESA Initiative recommendations I mentioned that TRCP and many stakeholders involved support.

Also, I wanted to be sure you (and Ryan pls forward to him) got an invitation for tonight's BBQ...and I am not registered...

Hope you can join us this evening...
ea

Edward B. Arnett, Ph.D.
Certified Wildlife Biologist®
Chief Scientist
Theodore Roosevelt Conservation Partnership
Loveland, CO 80537
970-775-7490 (office)
541-520-5252 (cell)
earnett@trcp.org
www.trcp.org





WGA Species Conservation and the Endangered Species Act Initiative Year Two Recommendations

Preamble

The Western Governors' Association (WGA), under the leadership of then-Chairman Wyoming Governor Matt Mead, launched the Western Governors' Species Conservation and Endangered Species Act Initiative (Initiative) in 2015. Since the Initiative's inception, WGA has hosted numerous workshops, webinars, and work sessions to create a forum for a diverse coalition of stakeholders to share best practices in species management, promote the role of states in species conservation, and explore options to improve the efficacy of the Endangered Species Act (ESA).

While the Initiative has closely examined the ESA, the effort goes well beyond consideration of the Act alone. Governors also are seeking to encourage voluntary conservation – through early identification of sensitive species and establishment of institutional frameworks that incentivize collaborative voluntary conservation – thus avoiding the need to list species in the first place.

The first year of the Initiative (2015-2016) resulted in approval of WGA Resolution [2016-08: Species Conservation and the Endangered Species Act](#) – an expansive resolution encapsulating Governors' principles informed by the Initiative. The Resolution instructs WGA staff to develop a multi-year workplan to further Governors' policy principals on Species Conservation and the ESA. What followed in the first year of workplan implementation (2016-2017) was a continuation of the transparent, inclusive, and stakeholder driven process to refine and examine avenues for implementation of Governors' policy statements expressed in the Resolution.

A suite of recommendations addressing proactive and incentive based voluntary conservation species and ESA implementation emerged from year two work sessions. Work session participants were not expected to reach full consensus on recommendations forwarded by the Governors. However, comity among work session participants gave rise to significant progress toward conceptual agreement and helped inform the Governors' deliberations on the recommendations contained in this document.

As interest within Congress and the Administration in examining the ESA builds, Western Governors' submit these bipartisan statutory, regulatory and funding-related recommendations consistent with implementation of the principles forwarded in WGA Resolution 2016-08, *Species Conservation and the Endangered Species Act*.

Importantly, with respect to statutory recommendations, Western Governors' acknowledge any Congressional effort to amend the ESA will be complicated and spark diverse opinions. WGA's ESA initiative enjoyed diverse stakeholder input and broad consensus; these resulting

recommendations represent bipartisanship at this stage. Each governor reserves judgment on whether to support Congressional action, based upon unknown future legislative language.

Statutory

1. A) Amend Section 4 of the Endangered Species Act to create flexibility for the U.S. Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS) (collectively, "Services") to create a prioritization schedule for petitions received. The Services must assign a petitioned species a listing priority within 12 months of a positive 90-day finding. Species in immediate risk of extinction will receive highest priority, while species with ongoing conservation efforts or species for which listing would provide limited conservation benefit within the foreseeable future will be placed in a lower priority category.

B) Amend Section 4 of the Endangered Species Act to create a statutory exception for the U.S. Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS) (collectively, "Services") to defer 12 month findings for a species under the ESA when: 1) a conservation plan is either being developed or implemented to meet the conservation needs of the species. In the case of species that range across multiple states, this refers to a plan in each state or a range-wide plan. The Services may renew the deferral every five years so long as they have worked with states to complete a determination that the conservation plan continues to meet the conservation needs of the species; 2) a delay will allow time to complete data collection or complete studies relating to the petitioned species; 3) species for which listing would provide limited conservation benefit within the foreseeable future.
2. Require the Secretary to make a determination on whether or not to designate critical habitat for a species. The Secretary shall designate critical habitat if he or she determines such a designation is necessary to recover the species. If the Secretary determines that such designation is not critical to recovery of the species, the Secretary may decline to designate critical habitat for a species. If the Secretary designates critical habitat, it must link such designation to recovery objectives and plans. For many species, recovery planning cannot occur until years after a listing, leaving a lot of time for critical habitat to be compromised in the meantime. When necessary, critical habitat should continue to be designated at the time of listing, and re-evaluated as part of the recovery planning process. The Secretary will retain current authority to permit exclusions from critical habitat designations for discrete purposes.
3. Upon listing, the Services will convene a recovery team within 12 months. States will have the option to lead and develop that team. The Recovery Team shall create a recovery plan, and lead its implementation. The recovery plan shall include criteria, that when met, would require the Recovery Team to recommend delisting or downlisting to

the Services. Whenever necessary, the recovery plan should be updated to include the best available science and strategies to address all recognized threats to recovering the species. Upon receipt of the recommendation to delist or downlist a species from the Recovery Team, the Service shall initiate a status review of the species for purposes of considering delisting or downlisting. Once the Services issue a delisting rule, they shall develop a post-delisting monitoring plan in a timely fashion, and judicial review of the delisting rule will be delayed until the completion of the post-delisting monitoring review period so long as a federally endorsed conservation plan is in place.

Regulatory/Administrative

1. Examine the possibility of providing assurances on public land to minimize the disincentive to enrolling in Candidate Conservation Agreements with Assurances (CCAs) for permitted public land users with operations spanning both federal and private land. Assurances provided may not come in the form of incidental take permit associated with CCAs, but rather a suite of assurances such as increased AUMs or extended grazing lease renewal periods for operators providing conservation actions on public lands, providing the assurances would not compromise the intent of the CCAA to recover the species to the point that ESA listing is not necessary.
2. When a landowner implements conservation measures as a part of a federally endorsed conservation agreement, The Services may exclude private land covered under the agreement from any critical habitat designation. This authority currently exists under the ESA, but needs further clarification and guidance.
3. When making listing determinations, the Secretary must take into account conservation efforts to protect species, including efforts by states, federal agencies, and private landowners.
4. The Services should work with states to develop templates for voluntary conservation programs and conservation tools that are intended to incentivize voluntary conservation for a variety of species and habitats. These templates would provide a more streamlined process of implementing voluntary conservation programs for candidate and listed species.
5. Encourage the Service to develop Species Status Assessments to help inform a listing determination. If listing is deemed warranted, use this same assessment to inform development of a recovery plan blueprint so stakeholders are able to implement effective recovery actions prior to the release of a formal species recovery plan.
6. Given the Services' new policy of using Species Status Assessments (SSAs) as a routine part of listing and recovery decisions made under the ESA, recommend the Services promulgate regulations to ensure the SSAs serve their intended function of collecting

and analyzing foundational science on a species and updating that information promptly when new data or analysis becomes available. Give state wildlife agencies a leadership role on SSA teams commensurate with their position as the repository of the bulk of the data and expertise on many species. Most critically, provide an adequate internal appeals process for challenging the conclusions of an SSA, either to Ecological Services leadership or to the Regional Director, to ensure that a misguided determination does not become embedded in multiple future decisions about a species.

7. Develop a national policy for the implementation of 4(d) rules that details best practices and incentivizes strong local input.
8. Clarify or emphasize existing authority under the ESA for states to exercise concurrent jurisdiction with the Services to implement the ESA, including management of threatened species and issuance of Section 10 take permits, if states demonstrate a desire and capacity to do so.
9. If states decline to develop and lead a recovery team, as described in Statutory Recommendation #3, the Services shall still seek sufficient participation from states to assemble recovery teams. States maintain strong wildlife management expertise, relationships with their regulated communities, and are able to better identify those individuals and entities that can best contribute to the recovery planning process.
10. Establish an informative “playbook” to inform citizens on how to engage throughout various steps of the ESA process.
11. In the case of species which are listed as threatened or endangered where listing provides limited conservation benefit within the foreseeable future, concurrent with the listing, Services should issue a 4(d) rule that emphasizes regulatory flexibility. Services should also consider delaying critical habitat designations, as well as modify the way in which they conduct consultations.

Funding

1. Pair economic incentives with critical habitat and priority conservation designations on private land and public land permitted users to alleviate the burden of critical habitat designations on private land while rewarding stewardship of quality habitat. Incorporate a scoring system – similar to, but not duplicative of, farm bill incentive scoring system – developed by stakeholders and including states, for private land conservation priority to assign varying economic incentives.
2. The Services’ budget should include specific line items directing funding to assist stakeholders interested in seeking assurance agreements and other voluntary conservation efforts.

3. The Services currently allocate very little of their recovery budget to delisting or downlisting recovered species, which causes species to remain listed as threatened or endangered longer than the ESA intends. Congress should allocate money to the Services through a specific line-item in their budgets to enable the Services to timely delist or downlist species.
4. Congress should allocate additional funding to the Services' to implement the ESA. Western Governors believe that adoption of these recommendations will improve the efficacy of the ESA, but recognize that the Services and states require adequate funding to ensure successful implementation of the Act. Governors will work with Congress to identify priorities for funding that will facilitate voluntary species conservation efforts and improve the efficacy of the ESA.

SAVE THE DATE

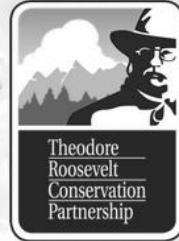
The TRCP invites you to attend a
barbecue with Secretary Zinke (invited)

APRIL 26, 2018 6:00 PM

THE POTOMAC BOAT CLUB
3530 WATER STREET, NW
WASHINGTON, D.C. 20007

Casual Attire

RSVP by responding to the calendar invitation or
emailing agrubb@trcp.org by April 19



To: Skipwith Aurelia (aurelia_skipwith@ios.doi.gov)[aurelia_skipwith@ios.doi.gov]
From: Brian Kelly
Sent: 2018-05-07T10:28:14-04:00
Importance: Normal
Subject: [EXTERNAL] meeting request
Received: 2018-05-07T10:28:25-04:00

Aurelia

Hope this finds you well. We had a meeting with Susan a few weeks ago and she wanted us to come in and brief you on the Deloitte Regulatory Reform Tool. Topic will be specifically ESA.

Do you have some time (1 hour) on Wednesday, Thursday or Friday?

Thanks look forward to seeing you soon.

Brian L Kelly

(b)(6)

To: Aurelia Skipwith[aurelia_skipwith@ios.doi.gov]
From: Chase Adams
Sent: 2018-05-08T13:50:56-04:00
Importance: Normal
Subject: RE: [EXTERNAL] Question Regarding DOI's role in Habitat Decisions
Received: 2018-05-08T13:51:02-04:00

Aurelia,

Appreciated your call yesterday. Just heard back from our producer, he says the official line is that these are Canadian Wolves (Gray Wolves) and that they migrated south from Oregon. This is the first year they've been in the area of the Plumas N.F.

I really don't know what more to do with this one, short of delisting it doesn't sound like there's much help. The producers do have questions as to whether these wolves actually migrated or were released and if they even are wolves, so they want to do some DNA testing.

Appreciate any thoughts you have. Still looking into the producer permits for vultures under migratory bird act.

Thanks again,

CA

From: Aurelia Skipwith <aurelia_skipwith@ios.doi.gov>
Sent: Saturday, May 5, 2018 3:55 PM
To: Chase Adams <Chase@sheepusa.org>
Subject: Re: [EXTERNAL] Question Regarding DOI's role in Habitat Decisions

Chase,
Are you available Monday afternoon?

Sent from my iPad
On May 1, 2018, at 2:01 PM, Chase Adams <Chase@sheepusa.org> wrote:

Aurelia,

I was hoping you might have some insight into an issue one of our members is facing regarding a wolf pack that is now in his area. He lives in Susanville, CA and has taken a big hit to his lamb crop.

One of our members had mentioned to him that there might be a chance that Interior could overrule a state's finding of suitable habitat for a reintroduced species? Was talking to Ethan and he thought, the State could overrule Interior's finding on suitable habitat, so naturally it might work the other way around. But I think there might be some concept of federalism that would prohibit it working the way our guys want it to.

Would greatly appreciate your thoughts, and happy to jump on the phone.

Thanks

CA

Chase Adams
Senior Policy and Information Director
American Sheep Industry Association
(202) 815-1411

To: Aurelia Skipwith[aurelia_skipwith@ios.doi.gov]
From: Anderson, John M.
Sent: 2018-05-14T19:30:12-04:00
Importance: Normal
Subject: [EXTERNAL] AEP HCP ABB ITP Notice of Intent to Prepare an EIS
Received: 2018-05-14T19:30:27-04:00
[2017-01176 Notice of Intent to Prepare and EIS for AEP ABB ITP.pdf](#)
[ATT00001.htm](#)

Hey Aurelia,

Good talking with you earlier. After checking with AEP it does appear the NOI for the HCP for potential take of American Burying Beetle associated with the PSO/SWEPCO Transmission line was published on January 19, 2018. If you could check and see where the DEIS is in the review process that would be great.

Let me know if you need any additional information.

Thanks again for your help.

John

John M. Anderson
Senior Policy Advisor
Nossaman LLP

Cell: 202-674-8569

55 Broadway
Cambridge MA
Landholding Agency: GSA
Property Number: 54201640008
Status: Excess
GSA Number: MA 0933 AA
Directions: Disposal Agency: GSA;
Landholding Agency: DOT; Bldg. 1
(211,654 sf.); bldg. 2 (21,970 sq.); bldg. 3
(67,977 sf.); bldg. 4 (46,899 sf.); 5 (13,856
sf.); bldg. 6 (12,934 sf.) 56+ yrs. old; sf.
listed above; property well maintained; sits
on 14 acres of land; property unavailable
due to an expressed federal need
Comments: Contact GSA for more
information.

Unsuitable Properties

Building
Alaska
Eielson Education Center
Eielson Air Force Base
Eielson AFB AK 99702
Landholding Agency: Air Force
Property Number: 18201640045
Status: Unutilized
Comments: Public access denied and no
alternative method to gain access without
compromising national security.
Reasons: Secured Area

California
Naval Air Facility Substation
Naval Air Weapons Station
China Lake CA 93555
Landholding Agency: Navy
Property Number: 77201640009
Status: Underutilized
Directions: (RPUID:153148)
Comments: Public access denied and no
alternative method to gain access without
compromising national security.
Reasons: Secured Area

North Carolina
OLF NAS Oceana (Parcel 013)
NAS Oceana
Oceana NC
Landholding Agency: GSA
Property Number: 54201640009
Status: Surplus
GSA Number: 4 D NC 0831 AG
Directions:
Landholding Agency: Navy; Disposal
Agency: GSA
Comments: Friable asbestos; Documented
deficiencies: abandoned building; partially
collapsing; collapsed ceiling; clear threat to
physical safety
Reasons: Extensive deterioration;
Contamination

Washington
Lake Wenatchee Ranger Station
Compound
17420 N. Shore Drive
Leavenworth WA 98826
Landholding Agency: Agriculture
Property Number: 15201640022
Status: Excess
Directions: 0767200 1203 (1058.005511);
2071 (1077.005511); 2270 (1078.005511);
2274 (1067.005511); 2277 (1075.005511);
2372 (48216010700); 2671 (1084.005511)
Comments: Property located within floodway
which has not been correct or contained.

Reasons: Floodway
Airport Rec Storage #5282
Chiwawa Loop Rd
Leavenworth WA 98826
Landholding Agency: Agriculture
Property Number: 15201640024
Status: Excess
Directions:
(2189.005511) 0767200
Comments: Property located within floodway
which has not been correct or contained.
Reasons: Floodway
[FR Doc. 2017 00885 Filed 1 18 17; 8:45 am]
BILLING CODE 4210-67-P

II. Confirmation of HCFAC Objectives
III. Presentations by Creative Marketing
Resource
IV. Review of Quality Housing
Counseling
V. Planning for Future HCFAC Meetings
VI. Next Steps
VII. Adjourn

With advance registration, the public
is invited to attend this meeting via
teleconference. To register for this
meeting please access the below link:
<http://www.hud.gov/emarc/index.cfm?fuseaction=emar.registerEvent&eventId=2974&update=N>.

The toll-free call-in number will be
provided once registration is confirmed.
Persons with hearing impairments may
also follow the discussion by first
calling the Federal Relay Service (FRS):
(800) 977-8339 and providing the FRS
operator with the conference call toll-
free number, which will be provided
upon registration.

Records and documents discussed
during the meeting, as well as other
information about the work of this
Committee, will be available for public
viewing as they become available at:
<http://www.facadatabase.gov/committee/committee.aspx?cid=2492&aid=77> by clicking on the
"Committee Meetings" link.

Dated: January 11, 2017.

Edward L. Golding,
*Principal Deputy Assistant Secretary, Office
of Housing/Federal Housing Administration.*
[FR Doc. 2017 01248 Filed 1 18 17; 8:45 am]
BILLING CODE 4210-67-P

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

[Docket No. FR-5858-N-04]

Announcement of the Housing Counseling Federal Advisory Committee Notice of Public Meeting

AGENCY: Office of the Assistant
Secretary for Housing—Federal Housing
Commissioner, Department of Housing
and Urban Development (HUD).
ACTION: Notice of Housing Counseling
Federal Advisory Committee (HCFAC)
public meeting.

SUMMARY: This gives notice of a Housing
Counseling Federal Advisory Committee
(HCFAC) meeting on Wednesday,
February 8, 2017, via conference phone,
and the proposed agenda. The meeting
is open to the public and is accessible
to individuals with disabilities.

DATES: The meeting will be held on
Wednesday, February 8, 2017 from
12:00 p.m. to 2:00 p.m. Eastern Daylight
Time (EDT) via conference phone.

FOR FURTHER INFORMATION CONTACT:
Marjorie George, Housing Program
Technical Specialist, Office of Housing
Counseling, U.S. Department of Housing
and Urban Development, 200 Jefferson
Avenue, Suite 300, Memphis, TN 38103;
telephone number (901) 544-4228 (this
is not a toll-free number). Persons who
have difficulty hearing or speaking may
access this number via TTY by calling
the toll-free Federal Relay Service at
(800) 877-8339. Individuals may also
email HCFACCommittee@hud.gov.

SUPPLEMENTARY INFORMATION: HUD is
convening the meeting of the HCFAC on
Wednesday, February 8, 2017 from
12:00 p.m. to 2:00 p.m. The meeting will
be held via conference phone. This
meeting notice is provided in
accordance with the Federal Advisory
Committee Act, 5. U.S.C. App. 10(a)(2).

Agenda Housing Counseling Federal Advisory Committee Meeting February 8, 2017

I. Approval of November 1, 2016
Meeting Minutes

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

[FWS-R2-ES-2016-N199;
FXES11140200000F2-178-FF02ENEH00]

Notice of Intent To Prepare a Draft Environmental Impact Statement for a Proposed Habitat Conservation Plan for the Endangered American Burying Beetle for American Electric Power in Oklahoma, Arkansas, and Texas

AGENCY: Fish and Wildlife Service,
Interior.

ACTION: Notice of intent; announcement
of meetings; request for comments.

SUMMARY: We, the U.S. Fish and
Wildlife Service (Service), are notifying
the public that we intend to prepare a
draft environmental impact statement
(EIS) to evaluate the impacts of
alternatives relating to the proposed
issuance of an Endangered Species Act
(ESA) Incidental Take Permit (ITP) in
response to the American Electric Power

Habitat Conservation Plan (HCP). The ITP is needed to cover incidental take of the endangered American burying beetle (ABB) from activities associated with construction, operation, and/or maintenance of electric transmission and distribution lines or other associated infrastructure. American Electric Power (AEP) intends to apply for an ITP under the ESA and agrees to develop and implement the proposed HCP. We also are announcing the initiation of a public scoping process to engage Federal, Tribal, State, and local governments and the public in the identification of issues and concerns, potential impacts, and possible alternatives to the proposed action.

DATES: In order to be included in the analysis, all comments must be received or postmarked by February 21, 2017.

See **SUPPLEMENTARY INFORMATION** regarding meeting dates.

ADDRESSES: Please provide comments in writing, by one of the following methods:

Email: *OKES_HCP_EIS@fws.gov*;
Facsimile: 918-581-7467, Attn: OKES HCP EIS; or

U.S. mail: Field Supervisor,
Oklahoma Ecological Services Field
Office, U.S. Fish and Wildlife Service,
9014 E. 21st St., Tulsa, OK 74129.

Please specify that your information request or comments concern the AEP draft EIS/HCP (TE01909C).

See **SUPPLEMENTARY INFORMATION** regarding meeting locations.

FOR FURTHER INFORMATION CONTACT:
Jonna Polk, by U.S. mail at the U.S. Fish and Wildlife Service, Oklahoma Ecological Services Field Office, 9014 E. 21st St., Tulsa, OK 74129, or by phone at 918-581-7458. If you use a telecommunications device for the deaf (TDD), please call the Federal Information Relay Service at 800-877-8339.

SUPPLEMENTARY INFORMATION: We publish this notice in compliance with the National Environmental Policy Act of 1969 (NEPA), as amended (42 U.S.C. 4321 *et seq.*), and its implementing regulations (40 CFR 1501.7, 1506.6, and 1508.22), and section 10(c) of the Endangered Species Act of 1973 (the Act), as amended (16 U.S.C. 1539(c)). We intend to gather the information necessary to determine impacts and alternatives to support a decision regarding the potential issuance of an incidental take permit to AEP, and the implementation of the supporting draft habitat conservation plan (HCP).

Meeting Information

We will conduct four public scoping meetings within the 62-county proposed

covered area, which includes the ABB range: Tulsa, OK; McAlester, OK; Fort Smith, AR; and Texarkana, TX. Exact meeting locations and times will be announced in local newspapers and on Service Web sites at least 2 weeks prior to each event (Oklahoma Ecological Services Office Web site, <http://www.fws.gov/southwest/es/Oklahoma/>; Arkansas Ecological Services Office Web site, <https://www.fws.gov/arkansas/es/>; and Arlington, Texas, Ecological Services Office Web site, <https://www.fws.gov/southwest/es/ArlingtonTexas/>). The scoping meetings will provide the public with an opportunity to ask questions and discuss issues with Service staff regarding the EIS and provide written comments.

Persons needing reasonable accommodations in order to attend and participate in a public meeting should contact us at the address listed in **ADDRESSES** no later than 1 week before the relevant public meeting. Information regarding this proposed action is available in alternative formats upon request.

We will accept written comments at each meeting. You may also submit written comments to the Field Supervisor at the email or U.S. mail addresses in **ADDRESSES**.

Background

Section 9 of the ESA prohibits “take” of fish and wildlife species listed as endangered or threatened (16 U.S.C. 1531–1544). Under section 3 of the ESA, the term “take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct (16 U.S.C. 1532(19)). The term “harm” is further defined by regulation as an act that actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 CFR 17.3). The term “harass” is also further defined in the regulations as an intentional or negligent act or omission that creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns, which include, but are not limited to, breeding, feeding, or sheltering (50 CFR 17.3).

Under section 10(a)(1)(B) of the Act, the Secretary of the Interior may authorize the taking of federally listed species if such taking occurs incidental to otherwise legal activities and where a conservation plan has been developed under section 10(a)(2)(A) that describes:

(1) The impact that will likely result from such taking; (2) the steps an applicant will take to minimize and mitigate that take to the maximum extent practicable and the funding that will be available to implement such steps; (3) the alternative actions to such taking that an applicant considered and the reasons why such alternatives are not being utilized; and (4) other measures that the Service may require as being necessary or appropriate for the purposes of the plan. Issuance criteria under section 10(a)(2)(B) for an incidental take permit require the Service to find that: (1) The taking will be incidental to otherwise lawful activities; (2) an applicant will, to the maximum extent practicable, minimize and mitigate the impacts of such taking; (3) an applicant has ensured that adequate funding for the plan will be provided; (4) the taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild; and (5) the measures, if any, we require as necessary or appropriate for the purposes of the plan will be met. Regulations governing permits for endangered and threatened species are at 50 CFR 17.22 and 17.32, respectively.

Public Scoping

A primary purpose of the scoping process is to receive suggestions and information on the scope of issues and alternatives to consider when drafting the EIS, and to identify significant issues and reasonable alternatives related to the Service’s proposed action (issuance of the ITP under the AEP HCP). In order to ensure that we identify a range of issues and alternatives related to the proposed action, we invite comments and suggestions from all interested parties. We will conduct a review of this project according to the requirements of NEPA and its regulations, other relevant Federal laws, regulations, policies, and guidance, and our procedures for compliance with applicable regulations.

Once the draft EIS and draft HCP are completed, we will offer further opportunities for public comment on the content of these documents through additional public meetings and a 90-day public comment period.

Alternatives

No Action Alternative

Under the no-action alternative, AEP would comply with the Act by avoiding impacts to (take of) the ABB where practicable. If take cannot be avoided and there is Federal involvement in the project (for example, a Federal permit, such as a Corps of Engineers section 404

Clean Water Act permit, authorization, or funding exists), AEP may receive take coverage through a biological opinion issued by the Service to the Federal action agency. If there is no Federal involvement in the project, AEP can apply for an incidental take permit from the Service. This approach is more time consuming and less efficient, because permits would need to be considered and processed one project at a time, which could result in an isolated, independent mitigation approach.

Proposed Alternative

The proposed action is issuance of an incidental take permit for the covered species during construction, operation, and/or maintenance of electric transmission and distribution lines or other associated infrastructure. The proposed HCP, which must meet the requirements in section 10(a)(2)(A) of the Act, would be developed in coordination with the Service and implemented by AEP. This alternative will allow for a comprehensive mitigation approach for authorized impacts and result in a more efficient and timely permit processing effort for the Service and AEP. Actions covered under the requested incidental take permit may include possible take of covered species associated with activities including, but not limited to, construction, operation, and/or maintenance of electric transmission and distribution lines or other associated infrastructure. The proposed permit submitted by American Energy Power provides coverage for a period of 30 years.

Sixty-two counties are in the proposed permit area, including Adair, Atoka, Bryan, Carter, Cherokee, Choctaw, Cleveland, Coal, Craig, Creek, Delaware, Garvin, Haskell, Hughes, Johnston, Kay, Latimer, Le Flore, Lincoln, Logan, Love, Marshall, Mayes, McClain, McCurtain, McIntosh, Murray, Muskogee, Noble, Nowata, Okfuskee, Oklahoma, Okmulgee, Osage, Ottawa, Pawnee, Payne, Pittsburg, Pontotoc, Pottawatomie, Pushmataha, Rogers, Seminole, Sequoyah, Tulsa, Wagoner, and Washington Counties in Oklahoma; Clark, Crawford, Franklin, Hempstead, Johnson, Little River, Logan, Miller, Sebastian, Scott, and Yell Counties in Arkansas; and Bowie, Fannin, Lamar, and Red River Counties in Texas. The species covered under the requested incidental take permit is the ABB. We will be evaluating whether the covered activities will impact other species and whether they should be included on the permit or if management practices can be implemented that are sufficient to

avoid take. These species and their legal status include:

- American alligator (*Alligator mississippiensis*)—Threatened (Similarity of Appearance)
- Arkansas fatmucket (*Lampsilis powelli*)—Threatened
- Arkansas River shiner (*Notropis girardi*)—Threatened, Arkansas R. Basin population, with Critical Habitat
- Gray bat (*Myotis grisescens*)—Endangered
- Harperella (*Ptilimnium nodosum*)—Endangered
- Indiana bat (*Myotis sodalis*)—Endangered
- Least tern (*Sterna antillarum* [now recognized as a subspecies *athalassos*])—Endangered, interior population
- Leopard darter (*Percina pantherina*)—Threatened with Critical Habitat
- Neosho madtom (*Noturus placidus*)—Threatened
- Neosho mucket (*Lampsilis rafinesqueana*)—Endangered with Critical Habitat
- Northern long-eared bat (*Myotis septentrionalis*)—Threatened
- Ouachita Rock pocketbook (*Arkansas wheeleri*)—Endangered
- Ozark big-eared bat (*Corynorhinus townsendii ingens*)—Endangered
- Ozark cavefish (*Amblyopsis rosae*)—Threatened
- Pink mucket (*Lampsilis abrupta*)—Endangered
- Piping plover (*Charadrius melanotos*)—Threatened; except Great Lakes watershed population
- Rabbitsfoot (*Quadrula cylindrica cylindrica*)—Threatened with Critical Habitat
- Red-cockaded woodpecker (*Picoides borealis*)—Endangered
- Scaleshell mussel (*Leptodea leptodon*)—Endangered
- Spectaclecase (*Cumberlandia monodonta*)—Endangered
- Whooping crane (*Grus americana*)—Endangered; except in the experimental population area
- Winged mapleleaf (*Quadrula fragosa*)—Endangered; except where listed as experimental populations

We do not anticipate that covered activities will result in take of all these species, but we seek comments to help inform our evaluation.

We also will evaluate whether covered activities are likely to impact the bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*), protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*).

Other Alternatives

We seek information regarding other reasonable alternatives during this scoping period and will evaluate the impacts associated with such alternatives in the draft EIS.

Public Availability of Comments

Written comments we receive become part of the public record associated with this action. Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that the entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Comments and materials we receive, as well as supporting documentation we use in preparing the EIS, will be available for public inspection, by appointment, during normal business hours at the Service's Oklahoma Ecological Services Field Office in Tulsa, Oklahoma, (see **ADDRESSES**, above).

Benjamin N. Tuggle,

Regional Director, Southwest Region, U.S. Fish and Wildlife Service.

[FR Doc. 2017 01176 Filed 1 18 17; 8:45 am
BILLING CODE 4333-15-P

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

[FWS-R8-ES-2016-N187;
FXES111608M0000]

Marine Mammals; Incidental Take During Specified Activities; Proposed Incidental Harassment Authorization

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice of receipt of application and proposed incidental harassment authorization; request for comments.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), have received an application from the California Department of Fish and Wildlife, Central Region, for authorization to take small numbers of marine mammals by harassment incidental to construction activities as part of a tidal marsh restoration project within the Minhoto-Hester Marsh in Elkhorn Slough, Monterey County, California. In accordance with provisions of the Marine Mammal Protection Act of 1972,

To: aurelia_skipwith@ios.doi.gov[aurelia_skipwith@ios.doi.gov]
From: Ann W Loomis
Sent: 2018-05-16T10:59:19-04:00
Importance: Normal
Subject: [EXTERNAL] Scheduling a call today?
Received: 2018-05-16T11:00:05-04:00

Hi Aurelia,

The 4th Circuit last evening vacated the Incidental Take Statement (ITS) that FWS provided to ACP. The Order retains the Section 7 consultation and Biological Opinion.

Could we schedule a call with you today or tomorrow to discuss how the FWS can revise the ITS?

Thanks,

Ann

Ann Loomis
Dominion Energy
202-585-4205

Sent from my iPhone

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To: 'Skipwith, Aurelia'[aurelia_skipwith@ios.doi.gov]
From: Ann W Loomis
Sent: 2018-05-16T17:38:06-04:00
Importance: Normal
Subject: [EXTERNAL] ACP: FERC letter on FWS Incidental Take Statement
Received: 2018-05-16T17:38:20-04:00
[20180516-3074\(32893588\).pdf](#)

Aurelia,

This afternoon we spoke with Paul Pfifer in the Regional office and would like to discuss the matter with you at your convenience.

Thank you,

Ann

Ann Loomis
Vice President, Federal Affairs
Dominion Energy
202-585-4205 (o)
202-997-1849 (c)

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FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D.C. 20426

OFFICE OF ENERGY PROJECTS

In Reply Refer To:

OEP/DG2E/Gas Branch 4
Atlantic Coast Pipeline, LLC
Atlantic Coast Pipeline Project
Dominion Energy Transmission, Inc.
Docket Nos. CP15-554-000 and
CP15-554-001

May 16, 2018

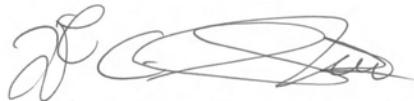
Mr. Matthew R. Bley
Director, Gas Transmission Certificates
Dominion Energy Transmission, Inc.
707 East Main Street
Richmond, VA 23219

Re: Incidental Take Statement Vacatur

Dear Mr. Bley:

On May 15, 2018, the U.S. Court of Appeals for the Fourth Circuit issued an order vacating the U.S. Fish and Wildlife Service's (FWS) Incidental Take Statement included within the FWS' October 17, 2017 biological opinion for the Atlantic Coast Pipeline Project. The Court indicated it would more fully explain its reasoning in a forthcoming opinion. As a result, Atlantic Coast Pipeline, LLC (Atlantic) has informed Commission staff that it will not proceed with construction in any areas where such activities may affect listed species covered by the FWS' Incidental Take Statement for the project. Atlantic should, within 5 days, file documentation that specifically identifies by milepost/stationing the habitat areas that will be avoided with respect to each of the listed species, and confirms the company's commitment to avoid construction in these areas. If you have any questions, please contact me at 202-502-6173.

Sincerely,



David Swearingen
Chief, Gas Branch 4
Division of Gas Environment
and Engineering

cc: Public File, Docket Nos. CP15-554-000 and CP15-554-001

To: Aurelia Skipwith[aurelia_skipwith@ios.doi.gov]
From: Lindell Marsh
Sent: 2018-05-17T14:21:19-04:00
Importance: Normal
Subject: [EXTERNAL] CCG/ELI January 18, Dialogue Session on Landscape-level Habitat Conservation -- Collaboration, Funding and Finance
Received: 2018-05-17T14:21:47-04:00
[2018.6.13 PRELIMINARY DRAFT Sess Otl.docx](#)
[FutureofHCPlanning FINALReport emailQuality 2016-10-19.pdf](#)

**Center for Collaboration-in-Governance
Environmental Law Institute
UCI Law Center for Land, Env. and Natural Resources**

The Future of Wildlife Habitat Conservation Planning

Dialogue Session: June 13, 2018

ELI Offices, 730 M Street NW, Suite 700, Washington DC

Final Invitational Dialogue Session:

**MULTIPLE AGENCY/INTEREST COLLABORATION IN FUNDING/finANCING OF
ADVANCE LANDSCAPE-LEVEL CONSERVATION/MITIGATION IN ANTICIPATION OF
DEVELOPMENT**

May 17, 2018
Aurelia Skipwith, Dep. Asst. Sec. FWP

Dear Aurelia,

We would welcome you, once again, to join us in the up-coming, final, session of the dialogue to be hosted by CCG, ELI and UCI Law CLEANR on Thursday, June 13, 2018, from 9:30 – 3:30 ET at ELI's offices (address above). ***The focus of this session is on multiple agency/interest collaboration in funding and financing of advance conservation/mitigation (and will briefly discuss the outline of the anticipated book capturing the results of the multi-session Dialogue).***

Attached is a preliminary discussion outline for the session (to be refined based on comments received); and, the earlier overview CCG Report on the Future of Habitat Conservation Planning. Of particular interest to our

dialogue are pages 38-50. Following the session, we will prepare, review with participants and then publish, a Master Report/Book capturing the results of the, now, seven sessions of this quite successful Dialogue.

Please RSVP; let me know if you will be joining us. We very much look forward to this session and your input at the table \.

Lindell

Lindell L. Marsh, Executive Director

Center for Collaboration-in- Governance

O: 949-706-7095 | M: 949-300-0042



A DIALOGUE ON THE FUTURE OF Habitat Conservation Planning

AUGUST 2016

A Report by:

THE CENTER FOR COLLABORATION IN
GOVERNANCE

Based on a multiple session
dialogue co-convened with

THE CENTER FOR LAND, ENVIRONMENT,
AND NATURAL RESOURCES,
UNIVERSITY OF CALIFORNIA, IRVINE
SCHOOL OF LAW ("CLEANR")

Prepared for publication by:
PLACEWORKS

REPORT BY THE

CENTER FOR COLLABORATION IN GOVERNANCE

ASSISTING PUBLIC AND PRIVATE AGENCIES AND INTERESTS TO
COLLABORATIVELY INNOVATE IN CREATING THE FUTURE.

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ACKNOWLEDGEMENTS AND MAJOR CONTRIBUTIONS

The primary rapporteur with respect to this Report has been Lindell Marsh, Executive Director of CCG, while the facilitators of the Dialogue sessions also included Alejandro Camacho, Director and Elizabeth Taylor, Staff Attorney, Center for Land Use, Environment and Natural Resources at UCI Law (“CLEANR”); Timothy Male, Associate Director for Conservation and Wildlife, White House Council on Environmental Quality; and Martin Wachs, PhD, Distinguished Professor, Emeritus, University of California (who also contributed significantly to the funding and finance portions of this Report);

And with major contributions to the Dialogue Sessions and, in turn, to this Report from:

Edward Boling, *Deputy Solicitor for Parks & Wildlife*, U.S. Department of the Interior and, currently, *Deputy General Council*, White House Council on Environmental Quality;

Dennis Grossman, *Senior Advisor*, Environmental Science and Policy, California Strategic Growth Council;

John Hopkins, Ph.D., California Coalition for Habitat Conservation (with respect to the experience and concerns of the Coalition);

Susan Hori, *Partner*, Manatt, Phelps and Phillips LLP;

Jaimee Lederman, *Attorney and Ph.D. candidate*, Luskin Center for Public Policy, UCLA (particularly with respect to funding and finance);

Ya-Wei Li, *Senior Director of Endangered Species Conservation*, Defenders of Wildlife;

Jim Lyons, *Deputy Assistant Secretary*, Land and Minerals Management, Department of the Interior;

Timothy Male, *Associate Director for Conservation & Wildlife*, White House Council on Environmental Quality;

Therese O'Rourke Bradford, *Area Manager*, Bureau of Reclamation;

Lynn Scarlett, *Managing Director*, Public Policy, The Nature Conservancy;

James R. Stritholt, *President and Executive Director*, Conservation Biology Institute;

Douglas P. Wheeler, *Partner*, Hogan Lovells - US, LLP; and,

David Zippin, *Vice President*, ICF

Prepared for Publication by Placeworks

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Purpose:

PURPOSE

In July, 2015, 32 key staff of interested federal and State agencies, public and private “stakeholders,” and academic researchers, gathered for a “conversation” on the Future of Habitat Conservation Planning (HCP), hosted by the President’s Council on Environmental Quality (CEQ), in collaboration with the Center for Land, Environment and Natural Resources (CLEANR) at University of California, Irvine School of Law (UCI Law) and the Center for Collaboration in Governance (CCG).

This conversation was the most recent in a series of four dialogue sessions convened by CLEANR and CCG on the Future of Habitat Conservation Planning (HCP Dialogue). In addition to the CEQ “conversation”, sessions were held in Sacramento, California (December 2014) and at UCI Law (February, 2014 and December, 2015). Ancillary to these sessions, smaller meetings and interviews on related topics were held in Washington, D.C., including meetings hosted by the Environmental Law Institute (ELI) focused on multi-agency permitting coordination, and with USDOT, FHWA and AASHTO (all acronyms are defined on page 11) focused on advanced landscape-level wildlife habitat mitigation/conservation in concert with infrastructure development.

This Report is a synthesis view of the HCP Dialogue to date based on the sessions convened, interviews, contributions and related research.² A list of those participating in the four sessions of the HCP Dialogue is included in Appendix A.

ACRONYMS

- **AASHTO:** American Association of State Highway and Transportation Officials.
- **BLM:** Federal Bureau of Land Management
- **CDFW:** California Department of Fish and Wildlife
- **CEQA:** California Environmental Quality Act
- **CWA:** Federal Clean Water Act
- **CZMA:** Federal Coastal Zone Management Act
- **DOI:** United States Department of the Interior
- **DRECP:** Desert Renewable Energy Conservation Plan
- **EPA:** United States Environmental Protection Agency
- **ESA:** Federal Endangered Species Act
- **ITP:** Incidental Take Permit under ESA, Section 10(a)
- **FHWA:** Federal Highways Administration
- **FLPMA:** Federal Land Policy and Management Act (Pub.L. 94-579) regarding federal lands managed by BLM
- **HCP:** Habitat Conservation Plan
- **LLC:** Landscape Conservation Cooperatives
- **MBTA:** Migratory Bird Treaty Act
- **NCCP:** California Natural Community Conservation Plan
- **NEPA:** National Environmental Policy Act
- **SAMP:** Special Area Management Plans under CSMA and CWA
- **USACE:** United States Army Corps of Engineers
- **USDA:** United States Department of Agriculture
- **USBR:** United States Bureau of Reclamation
- **USDOT:** United States Department of Transportation
- **USFS:** United States Forest Services
- **USFWS:** United States Fish and Wildlife Service
- **USGS:** United States Geological Survey

Executive Summary:

This report tells the story of what we have learned from the four dialogue sessions convened over the past two years.

HISTORY

The first HCP was approved more than 30 years ago in March, 1983. It addressed the “ecological community” of the 3,000 acre San Bruno Mountain area and concerns regarding potential urban development on its slopes. Since that time, HCPs have become the major approach for local, state and federal agencies, together with public and private interests, to collaborate in addressing wildlife conservation in concert with development. As the concept matures, it is outgrowing the ad-hoc manner in which such plans have been crafted, funded and managed (in relation to other plans and regulatory programs). This Dialogue, and the Report below, focus on innovative next steps in the furthering this concept and way of working.

LARGE SCALE CONSERVATION

HCPs have been utilized to support single project incidental take permits. However there are now more than 25 million acres across the nation covered by large-scale or area-wide HCPs (either completed or in process), providing for the conservation of hundreds of species. These include urbanizing areas in California, Texas, Florida, and Washington; timberlands in the Pacific Northwest; inter-state utility lines in the Midwest and eastern States; renewable energy projects (22.5 million acres in the California Desert alone); fly-ways in the Midwest; and major river-ways (the Colorado and the Santa Ana). These are in addition to multi-state plans and conservation efforts such as those relating to the Chesapeake Bay and its watershed, the South Florida Ecosystem Restoration Project and plans to address concerns related to the conservation of the Greater Sage-Grouse (see Case Studies in Chapter 3).

APPROACH

The conceptual elements of the HCP approach are:

- a geographic plan, collaboratively developed by those from the constituency of affected agencies and interests; and,
- an accompanying implementation agreement (IA), providing the basis for multi-agency regulatory approvals and permits (including, e.g., incidental take permits (ITPs) issued by USFWS under Section 10(a) of the ESA and, where applicable, state regulations.



Above: Infrared image looking over San Bruno Mountain to the San Francisco Bay.

San Bruno Mountain Habitat Conservation Plan (HCP): the “model HCP multi-agency/interest effort to conserve “ecological communities” in concert with anticipated development.

--H.R. Rep. No 997-835 (1982), U.S.C.C.A.N. 2807, 2830.



*Above left: Mission Blue butterfly (*Plebejus icarioides missionensis*)*

*Above right: Calippe Silverspot butterfly (*Speyeria callippe callippe*).*

Images of Endangered butterflies protected by the San Bruno Mountain HCP.



Above: Hooper's Island
Blue Heron Hiding in Chesapeake Bay
Watershed HCP
Photo source: Chesapeake Bay Program

FRAMEWORK

Moving beyond the ad-hoc application of the HCP concept, six elements are called for:

- 1 | Early broad-scale (statewide) science and mapping**
focused on eco-regions and systems, in anticipation of possible future infrastructure, development, and other human effects, and with a view of identifying species, habitats, areas, and foci of state-wide and regional ecological concern (that will provide information in support of more focused efforts, e.g., areas of critical concern or anticipated areas of anticipated conservation or development);

- 2 | Regional scoping of the conservation of eco-systems**
in anticipation of possible development and taking into consideration other concerns such as population growth, air quality (including climate change), transportation, and water, food, and energy supply.

- 3 | Early establishment (ideally at the State/federal level) of information/mapping systems** regarding State and regional eco-systems in relationship to anticipated infrastructure and development, together with the identification of areas calling for a next, more focused, level of planning - with participation by affected agencies and interests.



4 | Early landscape-level land acquisition and conservation (together with advance mitigation)

prior to institutional or physical changes that would result in the further fragmentation of land ownership or use or in the inflationary affects of anticipated development;

Above: Florida Panther

The Florida Panther habitat was preserved by efforts by the South Florida Ecosystem Restoration Task Force

Photo source: South Florida Water Management District

5 | Early funding and financing mechanisms

(for early science and mapping and the acquisition of habitat and conservation lands) with the development of mitigation banks and credit pools to, in part, expedite and contemplate infrastructure, development and other human activities; and,

6 | Increased collaboration among affected “silo-like”

agencies and interests, and the exploration and implementation of the principles and processes, made possible by information technology, that make such collaborations work e.g., dialogue and the use of scoping, pilots and models.

These “elements” may be part of a broader overarching framework (by agreement among State/federal agencies, and others) or may be developed as “tools” in support of conservation efforts, including HCPs. These elements will make HCPs more effective and efficient (reducing costs and time required for the implementation of infrastructure and other development) - allowing us to focus on other priorities.

Introduction

Chapter One:

THE CHALLENGE

A powerful image emerged from the HCP dialogues. In the late 1900s, Northern California experienced the “battle of the inland sea”³ in which towns and farmers fought against the floodwaters flowing off the northern Sierras that inundated their communities and cultivated lands. Initially, in an ad-hoc manner, one levee was built at a time and then several and finally, programmatically, a whole system of levees and waterways were constructed -- with State and federal participation and support. It was the same story with wells and canals to provide water in support of agriculture in the San Joaquin Valley and urban development in Southern California. Initially farmers sunk wells one-by-one and diverted streams, until finally, they came together with the State and federal governments to programmatically build one of the most advanced flood control and water distribution systems in the world. The result is the world’s most abundant breadbasket and one of the foremost economic engines in California.

Of course, there is a significant difference between these efforts and those discussed below. The difference is that the Northern California efforts focused on development and “infrastructure”: dikes, levees and channels, with little, if any, consideration of wildlife habitat. The Northern California effort proceeded without the appreciation that such development may have led to overdevelopment, the loss of habitat, (including the loss of an entire ecosystem, e.g. the Owens Valley) and the very need for the ESA (with its focus on the conservation of “threatened” and “endangered” species).

Clearly, there is significant change afoot. We as a country have become increasingly concerned about wildlife and eco-system conservation and, in the spirit of the first HCP, are focused on addressing the need for such conservation in concert with infrastructure, development and other human effects at the local, State and federal levels.⁴ Further, there are increasing and related concerns regarding our growing population, air quality (including the effects of climate change) and the availability of energy, food and water, all summarized as a concern for “sustainability”.

As a Nation, we have a growing concern regarding wildlife and eco-system conservation in relationship to anticipated population growth, infrastructure development, and “sustainability” and “resiliency”.

Some have suggested that conserved habitat or eco-systems can be viewed as “infrastructure”; however, this may not be quite right. Concerns regarding conservation and sustainability tend to be cautious and predictably will be viewed increasingly together with proposed development. In this light, the first HCP and others that followed can be viewed as early pioneering efforts of an increasingly “programmatic” practice, but one that has been narrowly focused (that is, focused on the reconciliation of wildlife and eco-system conservation with human development and activities). This has been an important step, but it is important to keep in mind that we are modeling approaches that may be called for in the future to address other aspects of “sustainability”. Key benefits of this practice include greater flexibility and increased coordination and collaboration among local, State and federal agencies and interests, utilizing common, flexible, multiple party agreements to provide coordination and assurances for both the public and private sectors, resulting in greater sustainability, efficiency and predictability for all.

The evolution of the Northern California efforts to manage storm water provides the proper perspective that is: innovatively working together programmatically

In addressing landscape-level ecosystem conservation and development together...we can anticipate increased up-front costs...[and] encountering narrowly focused silo-like agencies and private and public interests, often understaffed, with narrowly constrained budgets and perspectives.

Below: San Bruno Mountain Ridge Trail. The San Bruno Mountain HCP area covers the San Bruno Mountain south of San Francisco and within the cities of South San Francisco, Daly City, Colma, and Brisbane

and collaboratively to further evolve and create efficient and effective governance frameworks, institutions and practices that further mutual well-being.

We are supported in this work by our developing information technology and systems. This has allowed us to shift our focus from quasi-judicial permitting processes (involving full blown proposals and a myriad of individual agency “judgments”) to multi-agency/interest planning processes in which information is coordinated and shared among the various agencies and interests involved in the scoping of alternatives, impacts and effects and the development of common plans.

We are also increasingly addressing such eco-system conservation and development concerns together and early. As a result, we can anticipate more up-front costs (e.g., early large-scale research, mapping, planning and habitat acquisition), and longer-term net-benefits. And, as we pioneer this approach, we can anticipate encountering narrowly focused silo-like agencies and private and public interests, often understaffed, with constrained budgets (that do not reflect a shift in the application of funds) and challenged with adjusting to this new way of working (with immature principles, protocols and procedures). This poses a significant institutional challenge.

How do our institutions evolve to provide for the shift way from stove-pipe regulatory processes toward more integrated planning models that efficiently reconcile not only eco-system and development concerns, but also address other concerns related to sustainability generally?

LOOKING BACK AND FORWARD

The San Bruno Mountain HCP was a collaborative effort to reconcile development and wildlife conservation (the “ecological community”) and included local, State and federal agencies, as well as development and environmental interests. It provided the “model” for Section 10(a) of ESA, providing for permits for the incidental take of federally-listed threatened and endangered species (ITPs).⁵ And, while most HCPs that followed have focused on individual applicants and single species, there has been a growing trend toward focusing more broadly to address area-wide concerns. In addressing the ecological community, it addressed more than 50 “Species of Concern”. Some recent HCPs have focused on more than 140 species and areas that span multiple states and millions of acres. (See Figure 1.1 and Appendix B.)



Photo source: County of San Mateo, CA Parks Department

In addition to the historic focus of HCPs on wildlife concerns underlying the ESA and, recently, the MBTA (also within the jurisdiction of USFWS), with an appreciation that beyond these measures and with the exception of federal lands and waters, the regulation of wildlife conservation has been a State function that has been delegated, in large measure, to local agencies. Further, while HCPs have focused on federally-listed species, they have also provided the basis for State and local regulation (e.g., the California NCCP) with respect to wildlife and wildlife habitat and are beginning to be coordinated with federal permitting under the CWA (see Chapter 3). And, as they grow in scope, there are questions as to how they relate to other federal and state programs (e.g., FLPMA, USACE and USBR watershed plans and SAMPs and various State programs such as those focusing on wildlife, the environment, sustainability and infrastructure development).

TERMINOLOGY: “HCP,” “MSHCP,” “AREA-WIDE HCP”

With the expanded application of the HCP concept, questions arise as to terminology and classification. Generally, the development of a HCP is comprised of three elements: (i) a geographically focused, habitat conservation plan collaboratively prepared by a group of affected local, State and federal agencies and, in some cases, interests; (ii) an implementation agreement; and, (iii) on-going conservation as contemplated by the conservation plan. This idea was a paradigm shift in that it envisioned that the plan and agreement would be developed collaboratively and coordinated with related CEQA/NEPA processes, providing the basis for separate agency permits and approvals. This replaced the multi-agency, in-serial permitting process, contemplating separate (often conflicting) agency-by-agency permit conditions and was intended to provide assurances equivalent to “development agreements” which had then been authorized under various state legislation.

While the San Bruno Mountain HCP was the model and covered a number of “species of concern” within the plan area, many of the HCPs that followed focused on single species, a single project and a relatively small parcel of land - essentially a federal ITP with conditions. Further, implementing agreements are not an element of every HCP. For example, the current draft revisions to the HCP handbook provide that “Implementing Agreements are not required under Section 10 and are typically reserved for more complex, or multi-party plans. Some suggest that in many cases there is no need for an implementing agreement where all of the agreed-upon measures are spelled out in the HCP.” Since the adoption of the San Bruno Mountain HCP, we have increasingly employed “Area-wide HCPs” or “MSHCPs” covering multiple species and developed collaboratively by local, State and federal agencies. These Area-wide HCPs and MSHCPs have focused on urbanizing areas, timberlands, rivers and pipelines, transportation corridors, fly-ways and other areas related to solar and wind energy projects. Further, the HCP concept has increasingly embraced habitat more broadly, beyond the conservation of species listed as “endangered” or “threatened”.

The roots of the HCP concept can be found in earlier major pioneering collaborative efforts, such as the inter-state Delaware River Basin and Chesapeake Bay efforts (see Figure 3.1), and, in turn, provided the seed for the South Florida Eco-system Restoration Project.⁶ (See also Appendix C.)

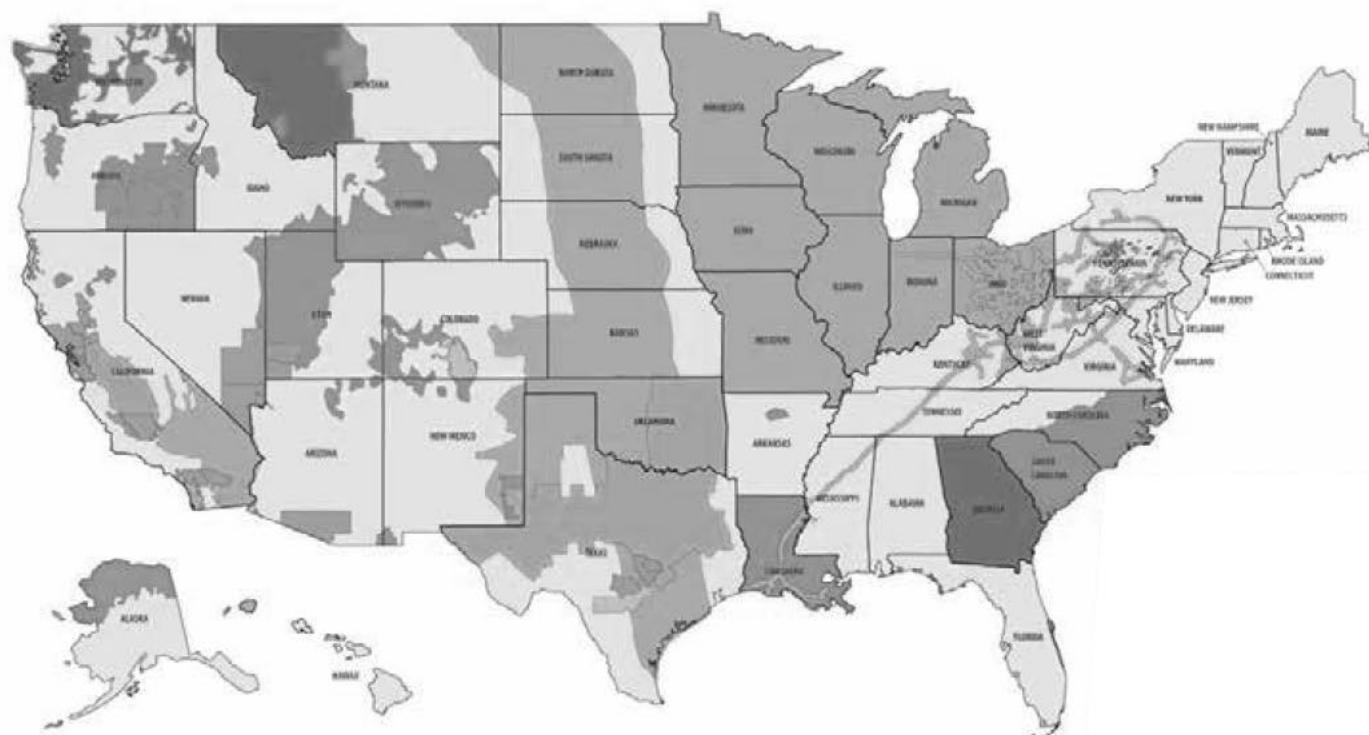
It is clear as well that the concepts underlying the HCP have even broader application. The geographic boundaries and the implementation agreement can be flexible and fashioned to address a variety of concerns ranging from disaster relief following hurricanes and tsunamis to climate change, urban renewal and sustainability.



Above: Townsend's Big-Eared Bat
A protected species in the California Desert Renewable Energy Conservation plan.

Photo source: the Bureau of Land Management / Desert Renewable Energy Conservation Plan

Increasingly, the HCP approach has been employed at earlier times in anticipation of infrastructure and development, with the increasing involvement of multiple agencies and interests. There are now more than 1100 completed HCPs covering millions of acres and many other similar processes and institutions.

FIGURE 1.1: NATIONWIDE EXTENT OF HCPS**Legend**

Habitat Conservation Plans (HCPs) greater than 100,000 acres*

- Timber Harvest HCP
- Gas and Electric Utility HCP
- Urban Development HCP
- Water Management HCP
- Renewable Energy HCP
- Rangeland Management HCP

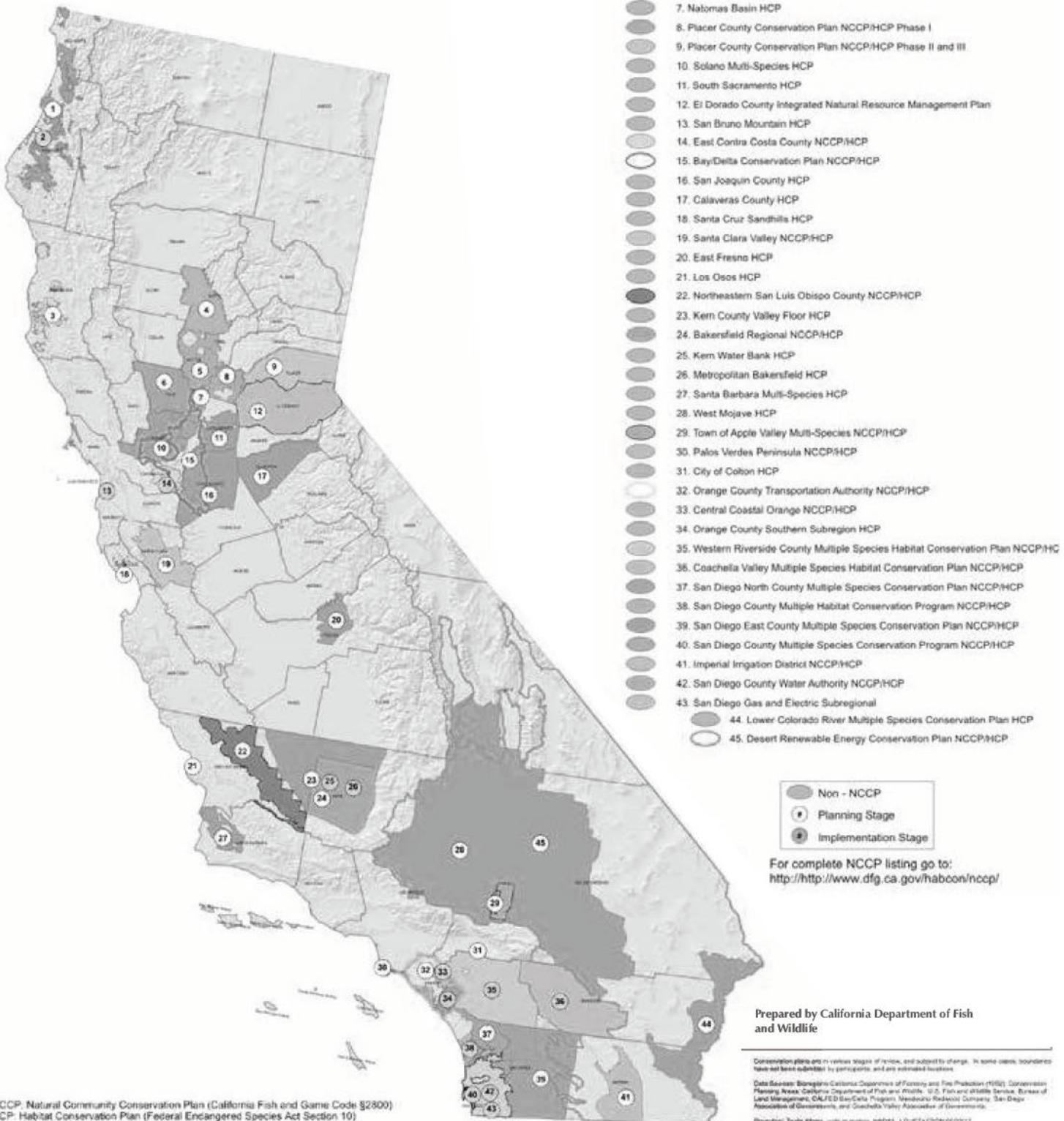
Other Endangered Species Act Section 10 Conservation Plans

- Safe Harbor Agreement
- Candidate Conservation Agreement/
Candidate Conservation Agreement with Assurances

* HCPs may cover one species or multiple species. Overlapping plans are not shown for clarity. In-process plans also shown. Approved plans as of January 2016. Boundaries are approximate.

Prepared by David Zippin, ICF

FIGURE 1.2: CALIFORNIA REGIONAL CONSERVATION PLANS



NCCP, Natural Community Conservation Plan (California Fish and Game Code §2800)
HCP, Habitat Conservation Plan (Federal Endangered Species Act Section 10)

“Effective HCPs rely on high-quality conservation, science and rapidly evolving mapping technologies. Advances in both have reached a point of potentially transforming how HCPs are developed and implemented at any spatial extent.”

—James R. Stritholdt,
President, Conservation
Biology Institute



Above: A Variety of Desert Parsley growing in a lek.

The Sagebrush steppe attract greater sage grouse for elaborate mating rituals. These areas, called leks, are protected by the Sage-Grouse HCP
Photo source: the Bureau of Land Management
Oregon and Washington

The focus of HCPs has been on regulatory compliance. The strong sense from our HCP Dialogue is that we now need to move beyond this limited focus and see HCPs as part of State and federal programmatic efforts to plan, fund and work proactively with local agencies and affected interests and to address habitat conservation in concert with infrastructure and other development.⁷ In this spirit, the question is: how are these efforts funded and financed? How do HCPs relate to other local, State and federal programs, particularly those focused on sustainability and the provision of water, energy, infrastructure and development more generally? And, appreciating the growing complexity and inter-relatedness of these programs, how do we promote collaboration and innovation?

INCREASING FOCUS ON LANDSCAPE-LEVEL CONSERVATION

As a young nation, our focus was on quickly dividing and moving the control and management of lands into the private sector to promote development.⁸ With a rapidly growing population, challenged by sustainability, our increasing focus is on a balanced human/nature interface. This is best accomplished at the landscape-level and before the lands have been fragmented (by use, ownership or jurisdiction).⁹ Such early action conserves landscape-level eco-systems, reduces acquisition costs (before land values escalate as development nears), and avoids increased conflict as the fire-line of development moves across the landscape.

In fact, for more than 30 years, the HCP approach has been used at increasingly earlier points to address broader eco-systems (in terms of both the numbers of species and the expanse of lands and eco-systems covered). This has also resulted in the increasing involvement of a spectrum of agencies and interests (e.g., at the federal level: BLM, USBR, USFWS, and NPS; USDA; USACE; USDOT FHWA; and EPA).

Nationwide, there are now more than 1100 HCPs completed or in process, covering millions of acres many of which are landscape-level (see Figure 1.1 and Appendix B). These plans relate to transportation infrastructure, pipelines, energy projects and other infrastructure; forests; rivers (e.g. the Colorado and Santa Ana Rivers, the California Bay-Delta). However, in many cases, the formal HCP aspect of this process has been abandoned in favor of consultations under Section 7 of the ESA; agriculture; urbanization; and oil and gas development. For example, these HCPs, or similar efforts, include the following:

- HCP-like Sage-Grouse Action Plans were adopted by BLM and the USFS within eleven Western States to conserve the Greater Sage-Grouse (see Figure 3.6). As a result, the Secretary of Interior has determined that the listing of the species as “endangered” was not warranted.¹⁰
- The South Florida Eco-system Restoration Project, mentioned above, focuses on the recovery of the Everglades and the restoration and management of its surface water regime, covering approximately four million acres. (See Appendix C.)
- The fourteen state NiSource HCP addresses the impacts of a 15,562 mile natural gas pipeline. (See Appendix B.)
- Two multi-state wind energy HCPs: the Great Plains HCP, covering 268 million acres from North Dakota to Texas, and another covering the eight states adjacent to the Great Lakes. (See Appendix B.)

- The proposed California Desert Renewable Energy Conservation Plan, a HCP, NCCP and DRECP covers 22.5 million acres, which has recently been restructured to focus first on the development of a BLM Land Use Plan Amendment under FLPMA, covering 16 to 18 million acres (with anticipated renewable energy projects comprising 177 thousand acres), based on an innovative “Gateway” mapping and information system. (See Figure 1.2 and Appendix D.)
- There are multiple timber HCPs in the Pacific Northwest, stretching across five states. These are largely either self-funded (by the timber/infrastructure operators) or funded on an ad-hoc basis from various local, State and federal sources and from project fees and overseen at a high level by State and federal agencies. (See Appendix B.)
- The Lower Colorado River Multi-Species Conservation Plan with an area of 717,000 acres that extends over 400 miles of the River to the border with Mexico. (See Appendix B.)
- County-scale HCPs focused on urban and infrastructure development in several states, including California, Colorado, Florida, Texas, Utah, and Washington. The HCPs in preparation or being implemented in California will conserve over 2 million acres of wildlife habitat (mainly in large preserves with protected landscape linkages to maintain connectivity) and will provide streamlined permitting for over \$1.6 trillion dollars of economic activity. In several cases, California voters approved, with two-thirds super majorities, the use of local sales tax revenues to finance landscape-level HCPs to mitigate the impacts on endangered species of major expansions of transportation infrastructure. For example, the San Diego Association of Governments (the Metropolitan Planning Organization (MPO)) is raising \$850 million in San Diego County sales tax revenues through “TRANSNET”, a program to mitigate impacts on wildlife habitat. Similarly, the Orange County Transportation Authority has used Orange County sales tax revenues to acquire more than 1300 acres of conservation lands to mitigate impacts of expanded transportation infrastructure.
- The South Florida Eco-system Restoration Project (see Chapter 3-Case Study 3 and Appendix C), and the Delaware River Basin and Chesapeake Bay programs (see Chapter 3-Case Study 1) are also examples of unique efforts with high-level state and federal participation and funding which have innovatively struggled with approaches to achieve collaborative innovation in addressing habitat and water quality concerns with respect to the broad eco-systems involved.

HCPs have proven effective in conserving habitat and making development more efficient and less costly. However, questions remain: funding and financing programs and arrangements; coordinated multiple agency permitting; effective monitoring and enforcement; and consideration of other broad concerns regarding, e.g., “sustainability” and “resiliency”.

HCPs have proven effective in both conserving habitat and making development more efficient and less costly. As compared with project-by-project mitigation, early landscape-level advance mitigation and conservation is far more efficient, effective and critically important.¹¹ And while successful examples of pioneering efforts have been identified and explored, significant questions still remain regarding the implementation of this concept more broadly, for example:

- How are landscape-level mitigation/conservation plans to be funded and then re-paid from infrastructure or other development?
- How can HCP processes be efficiently coordinated with other permitting processes?

- How can the resulting conserved habitat be best managed, and the related plans and implementation agreements monitored and enforced?
- How can the effects of climate change on wildlife conservation and adopted HCPs be addressed (with an appreciation that a change in climate will result in major changes in both habitat and the form of the HCPs and other programs)?



Above (top): Mohave Ground Squirrel

Above (bottom): Burrowing Owl

The California DRECP identifies areas where habitat conservation and management actions should occur to conserve, enhance, restore, and protect covered species, including the Burrowing Owl and Mohave Ground Squirrel.

Photos by Bud Widdowson (Top) / Phil Leitner

(bottom)

Photo source: Desert Renewable Energy Conservation Plan (both)

These questions remain unanswered following the four HCP Dialogue sessions - left to be explored and translated into principles and practices. However, several proposed axioms emerged for further consideration:

- Habitat conservation is most effectively and efficiently addressed, in advance, at the landscape level in anticipation of infrastructure and development.
- HCPs should be viewed more broadly, beyond the regulatory perspective of the ESA, as part of broader “programmatic” efforts (common planning efforts, funding, coordinated implementation) among pertinent federal, state and local agencies and private interests.
- Early surveys, research and programs, at the State and regional level, are important in order to understand and reconcile habitat conservation with economic development in making the HCPs more effective and efficient.
- Early State and federal programmatic funding makes sense, in support of early advanced wildlife habitat acquisition for conservation and mitigation, and may be essential.
- More effective and efficient standardized guidelines, processes, tools, protocols and principles (e.g., relating to inter-agency collaboration, mitigation credit pools) would be helpful.
- The conceptual principles underpinning the HCP concept: collaboratively developed geographic-based plan, implementation agreement (providing for mitigation, management, monitoring, etc.), are applicable to other complex situations that involve a number of affected agencies and interests.

These principles and related ideas regarding standards, practices and processes are discussed below, as well as thoughts regarding furthering the HCP Dialogue.

CURRENT ISSUES ABOUT THE FORM AND FUNCTION OF HCPS

The foregoing is not intended to suggest that there are not current issues regarding the form and function of HCPs. There are, however, they do not detract from proposals for an early, programmatic, landscape-level approach to conservation in reconciliation with infrastructure and development generally. For example:

- How should we address changed circumstances related to climate change?
- Signatory agencies to an HCP IAC have specific authority. However, HCPs may address matters that transcend such authority (e.g., addressing a landscape-level eco-system or eco-systems, when, arguably, the specific agency's authority is limited to a specific species). Are we providing by agreement for an expansion of the authority of individual agencies?

- The past warring between the development and environmental communities reflects and promotes distrust and, in turn, an increased focus on the documents evidencing the various HCPs, as well as their enforcement. Environmental interests attack approvals based on the inadequacy of analyses and documentation. In response, the development community and the regulatory agencies, in the middle, respond with even more detailed processes and more voluminous and detailed documentation and demands (sometimes using the burden of the process as a lever in the “negotiations”). The result is often protracted processes and voluminous documents that are inscrutable, promoting reliance on agency interpretation and arguments over their interpretation. There is no clear answer to these concerns, other than to suggest that with experience and with better leadership, as we embrace and implement the idea of “collaboration” in the preparation of HCPs, the process will move from being a negotiation in which each party attempts to maximize the satisfaction of its demands to one in which there is an increased sense of trust, common fairness and reasonableness among those framing the documents. In turn, the expectation is greater simplicity and clarity in the form of the documentation and the processes employed to craft them.

Current issues:

- » Programmatic funding/financing;
- » Differentiating the roles and authority of the various agencies involved in a particular HCP;
- » Addressing the effects of climate change;
- » Moving from “conflict resolution” to “collaboration”.

INCREASING ROLE OF SCIENCE, MAPPING AND INFORMATION TECHNOLOGY

An increasingly important foundational element of such broad collaborations is trusted scientific information and protocols that are available and can be relied upon with confidence by those involved. There is a need to further explore how science and science-based tools (models, decision support tools, mitigation calculators, etc.) can help increase efficiency, effectiveness, and legitimacy of these processes. It is suggested, for example, that a web-based data platform, easily accessible and transparent, should be established at the outset of a planning process, and maintained throughout the planning and implementation phases (i.e., transitioning from a platform to assemble available data, to decision-support tools for plan development, to an adaptive management and monitoring platform where data are stored, maps updated, etc.). The intent would be to make the data readily accessible by the affected agencies and interests involved (including non-technical participants) and the public. (See the Data Basin and Gateway approach described in Appendix D.)

It has also been suggested that there should be independent scientific input throughout all phases of planning and implementation, with the observation that DOI and other public agencies acknowledge they are understaffed and unable to keep up with conservation science, and that plans are often ineffective and inefficient (and non-transparent) as a result. The point suggested that conservation science, remote-sensed data, data base platforms, models to fill information gaps, decision-support tools, etc., are evolving rapidly and can be used to increase objectivity, transparency, efficiency, effectiveness, and defensibility of HCPs. At the same time, some have suggested that some of those involved (permit applicants” and some agencies) may not be in favor of “too much science meddling”, fearing costs, delays, etc., but that scientists can actually help reduce costs by recommending cost-effective ways of filling information gaps, monitoring species, etc.¹²

Programmatic Conservation in Coordination with Infrastructure and Development

Chapter Two:

IN GENERAL

Landscape-level conservation is a critical focus in effectively and efficiently conserving wildlife habitat in concert with infrastructure and development. It is also becoming apparent that this needs to occur in a programmatic manner - coordinated with affected local, State and federal agencies and interests, and, increasingly related as well to other concerns such as "sustainability".

Agencies are often concerned primarily with the provision of infrastructure; which consists of the basic facilities relating to energy, transportation, water supply, waste, storm water and communications. While development of such facilities, and the development that follows, can adversely impact wildlife habitat and ecosystems, most public agencies have advanced to the point that they embrace the need to minimize and mitigate such harm. This concern and the growth of knowledge, techniques, and tools for addressing ecological impacts of infrastructure, is exemplified by the collaborative Eco-Logical Program of USFWS and USDOT ("Eco-Logical: An Ecosystem Approach to Developing Infrastructure Projects"). This approach "encourages Federal, State, tribal and local partners involved in infrastructure planning, design, review, and construction to utilize flexibility in regulatory processes. Specifically, Eco-Logical lays the conceptual groundwork for integrating plans across agency boundaries, and endorses ecosystem-based mitigation - an innovative process for mitigating infrastructure impacts that cannot be avoided".¹³

It was the sense of the HCP Dialogue, this appears to be the right direction and needs to be met with a broader multi-agency/interest framework of support, participation, tools

Landscape level conservation should occur in a programmatic manner, coordinated with affected local, State and federal agencies and interests, AND addressed in the context of "sustainability" and "resiliency".

Below: Kissimmee River in South Florida
Image of South Florida HCP landscape



Photo source: South Florida Water Management District

and practices. The following is a beginning list of thoughts regarding the principles and tools that would be helpful for a programmatic approach to accomplish the various objectives discussed in this Report which are becoming increasingly common.

LANDSCAPES AND ECOSYSTEMS

As the number of HCPs increase, it would be helpful to have a better understanding of the nature and value of the ecosystems involved, and potential future conflicts or, complexity with respect to their conservation. This could be provided on a State-by-State basis, perhaps pursuant to cooperative federal-State efforts, including, efforts related to various current federal, State and non-governmental organizations (NGO) programs, such as the Eco-logical Program mentioned above, State Wildlife Action Plans or the DOI-led program of Landscape Conservation Cooperatives (LCCs).¹⁴ The specific studies and information could be focused at a State-wide level, which could then focus down on regions and more specific areas within a State. The result could be similar to, for example, the designation of "Areas of Critical State Concern".¹⁵ In some cases, such as the Greater Sage-Grouse, the eco-system may transcend State boundaries. However, while a single plan transcending State boundaries may be appropriate, political and institutional considerations often necessitate individual State plans or arrangements. The approach and design of such plans calls for further thought on the part of the States as well as the federal agencies, perhaps collaboratively. As suggested below, our evolving information systems make the development and implementation of such plans more feasible, whether State-by-State or inter-State in scope.

Early biological research is required: surveys, mapping, identification of potential gaps in the conservation systems, etc., in order to prioritize which landscapes should be conserved, followed by the development of plans and strategies for their conservation (e.g., the acquisition or setting aside of public lands, or the development of conservation/development approaches). This early work may also gauge the threats to wildlife conservation from, for example, urbanization, transportation and energy infrastructure, oil, gas and mineral development, farming and ranching, etc. or climate change. It may also address opportunities, such as those presented by large-scale

Below: Sage Grouse Habitat
Sage Brush Landscape



Photo source: the Bureau of Land Management Oregon and Washington.

ranches that are intact and, with the support of the ranchers, available for conservation. To the extent that there are potential conflicts between habitat conservation and other uses, there may be a need for a HCP or a HCP-like planning approach and regional or State coordination.

This work is increasingly supported using sophisticated computer modeling efforts (e.g., eco-system and habitat distribution models, species population models, landscape intactness, ecological integrity, and conservation value models, climate change effects analyses, resiliency and refugia analyses, and mitigation calculators) that are developed and updated in an increasingly collaborative, available and transparent manner.¹⁶

PROGRAMMATIC WILDLIFE CONSERVATION IN RELATION TO DEVELOPMENT

At various times in the past, States and the federal government have undertaken broad, system-wide efforts to address their lands and waters broadly.¹⁷ Currently, there is a similar feeling abroad, not so much with a view that it is time for a great change in direction, such as experienced in the early 1970's with the environmental revolution, but rather that there now may be more of a common desire to cooperate in reconciling the development/ environment relationship.¹⁸ With this in mind, the following discusses the role of the HCP as part of a broader programmatic approach with a focus on our built environment together with our natural environment.

With our growth in population, anticipated climate change, and the dramatic effects of innovation in information technology, we are experiencing major change in our systems and concerns regarding transportation, water, energy and sustainability (including the conservation of eco-systems). It is critical that we appreciate and embrace this change, and must view the re-ordering involved from the "mother-board" up with wildlife/eco-system conservation being considered together with infrastructure and development earlier and more broadly. They are intertwined in our nation's future and should be addressed programmatically in that manner. HCPs can be seen as the early beginnings of an effort to coordinate and programmatically relate the two more broadly.

At the federal level, an increased focus on a programmatic approach could build on the current HCP and other programs (e.g., State Wildlife Plans, LCCs and, in a more detailed manner, the Eco-Logical program) in bringing together federal agencies and others. It could embrace the concept of collaboration and focus on the coordination of development and conservation - with the HCP as one tool in the tool box. Such an increased focus could be explored more broadly under the auspices of CEQ, DOI and/or others.¹⁹ Initially, it could include bringing together DOI (including USFWS, BLM, USGS), USACE, EPA, USDOT and USDA, in coordination with, e.g., the DOI LCCs and Eco-Logical transportation-related programs)²⁰ As modeled by the Sustainable Communities Partnership among EPA, USDOT and the Department of Housing and Urban Development (HUD) as partners, it would be valuable to explore how to include in the development and implementation of those efforts, State and local agencies and private interests. Efforts regarding the conservation of the Greater Sage-Grouse and the California Desert Renewable Energy Program point very much in that direction.

COLLABORATIVE (MULTI-AGENCY/INTEREST) INNOVATION

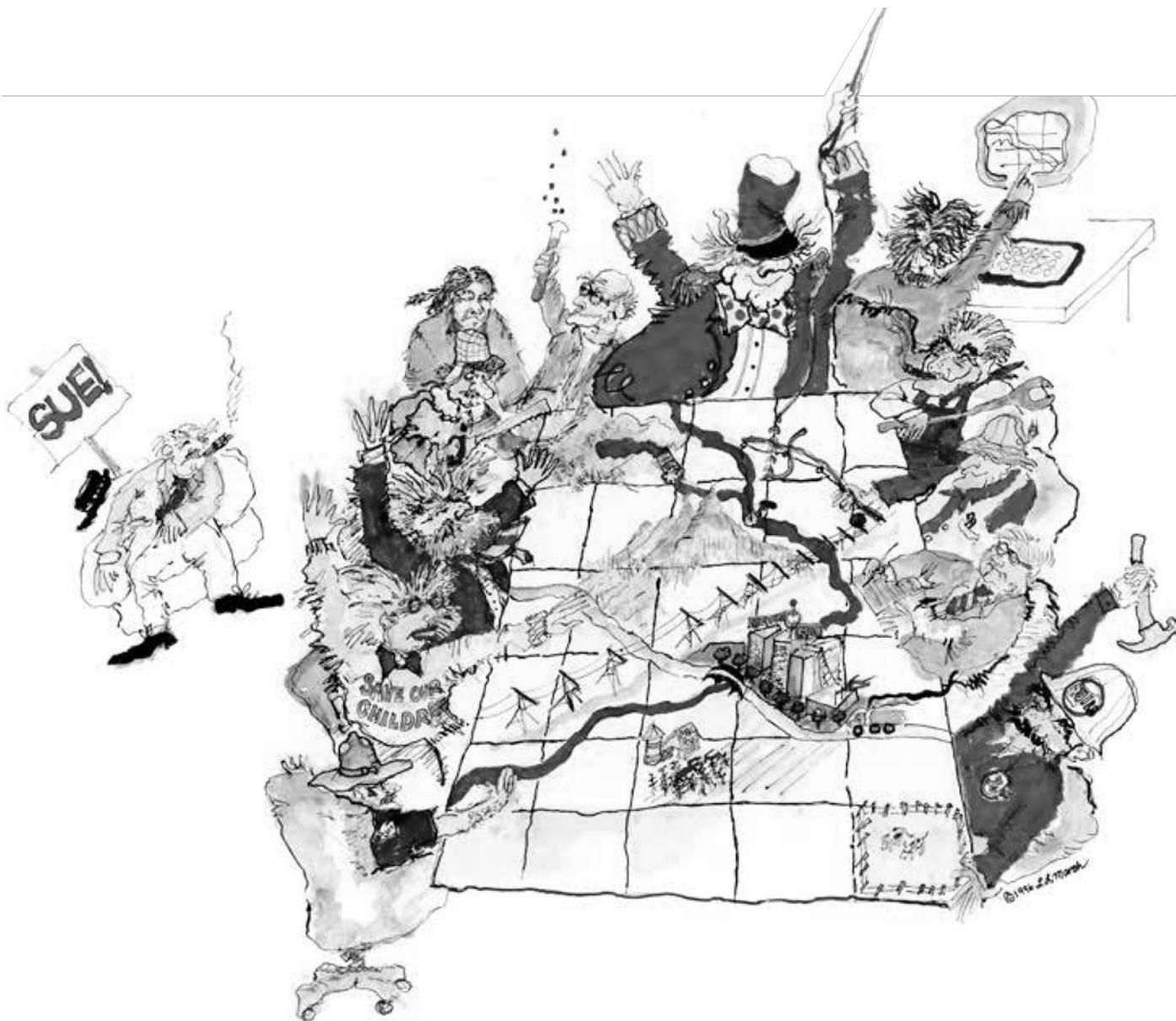
Below: *Conducting Multi-Agency Collaboration*

This image is intended to capture the spirit of the collaborative process, with the “conductor” (perhaps a small group of leaders), assisting the agencies and interests involved to “stitch” together and “craft” a quilt, articulating a way forward – based on science, respect, and, ideally, empathy and exuberance.

Drawings by L. Marsh

There are significant changes in our culture and governance structures as a result of the information revolution. With these changes, information is increasingly available and easier to store, manage and share.²¹ As a result, we are seeing organizations and institutions operating more horizontally (with greater and quicker direct coordination within, and between, layers in the hierarchies and between hierarchies). Further, we are also working more virtually rather than face-to-face. The shift is toward greater “collaboration” but with less face-to-face interaction.

The HCP is an early model of this shift in our way of working. It stressed multi-agency/interest collaboration in the development of a geographical-based plan, with an agreement for its implementation. What are the processes, practices and protocols called for in the further evolution of this model.²²





Key elements of collaborative planning processes:

- **Collaboration:** “Collaboration” is not the same as “conflict resolution” and it is more than “cooperation.” Collaboration utilizes a planning, rather than a conflict-resolution model, and can be characterized as agencies (and interests) working and planning together, with respect, consideration and support for the different objectives of each. “Planning” involves the resolution of conflicts; however, in collaborating, participants come to the table with a different sense or set of principles underlying the relationship to others. “Conflict-resolution” brings up images of warring parties, each tending to view the outcome as winning or losing and with each party focused on “more” for itself from the outcome. “Planning”, on the other hand, suggests a more amicable, respectful, empathetic relationship among those involved understanding that their differing views will merge through “dialogue” into a single out-come or plan, although with respect for their distinct principles. Finally, the “Implementation Agreement” provides assurances that the plan will be honored moving forward. One way of looking at the collaborative process is that the result (a plan) is the goal and those involved in the planning process need to work together to develop the best plan going forward.
- **“Constituency of Affected Agencies and Interests”:** Who is involved? Each planning process has a constituency of affected agencies and interests. It is important to provide for their involvement (at the table or by soliciting and sharing their input and/or votes). Some use the term “stakeholders;” however, often this characterization is seen as excluding various public agencies. So how do we plan for and convene or involve groups in a way that promotes dialogue and gets away from the underlying sense of “winning” and “losing”? Both the Bay-Delta Conservation Plan and the DRECP have struggled with the appropriate inclusionary process, involving a significant number and diversity of agencies and interests, focusing on broad geographic areas.²³ It would be valuable to further consider how these, and other, similar processes were structured, in crafting future efforts.
- **Dialogue:** “Dialogue” is based on principles of respectfulness (in this case, of the differences among the agencies, interests and individuals involved), truthfulness, good will, and civility - while respecting both one’s organizational mandates and working to understand and accommodate with empathy the mandates of the other agencies and interests involved.

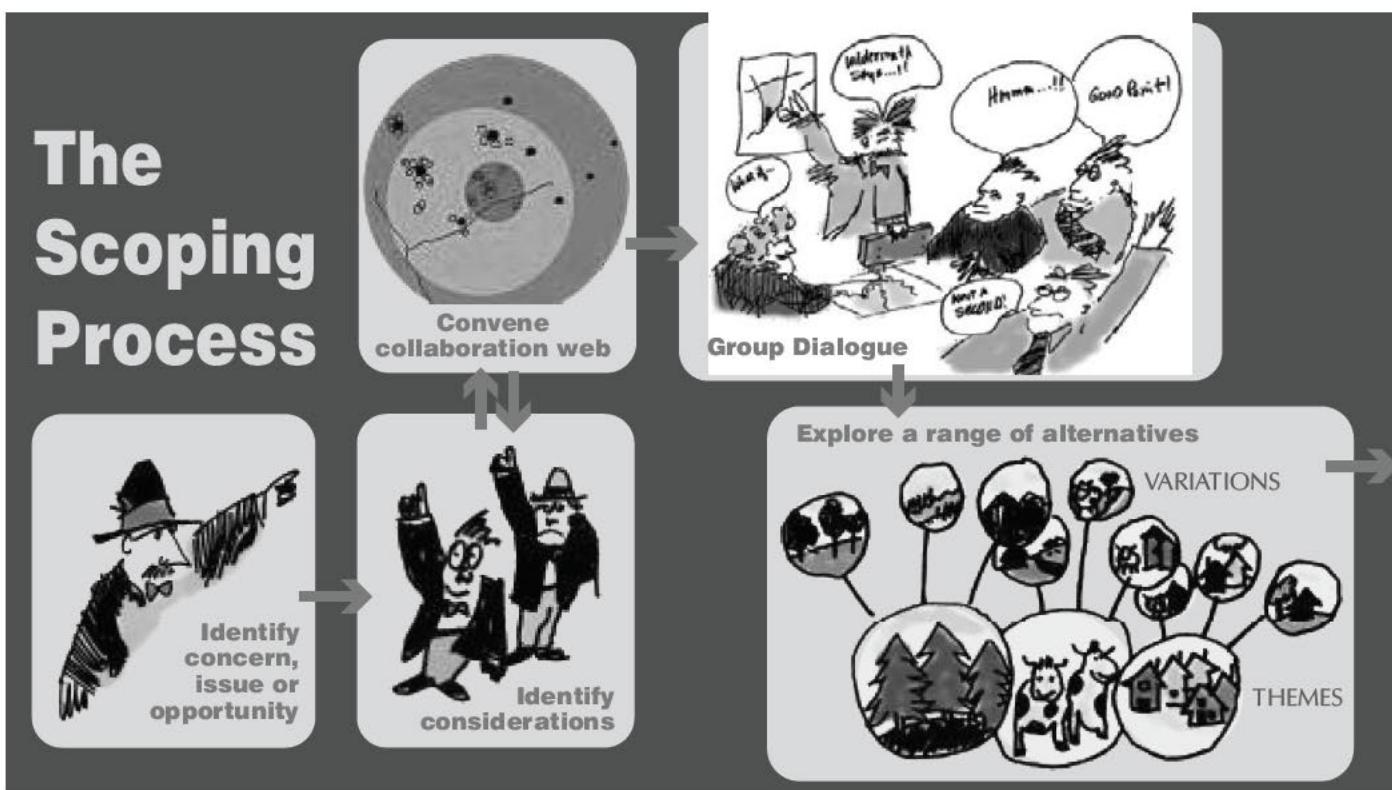
Above: Landscape view of California Bay Delta

Photo source: Bay Delta Conservation Plan

Innovation pilots and models are a powerful and effective way of working (especially if blessed at a high level by the agencies and interests involved).

This concept of respectfulness of diversity is one of the key principles of our culture. At base, there is an understood principle that people may have diverse views, beliefs, truths and objectives (for example, the importance of a particular use of land or resources), but find a way to join together through “dialogue” in planning and moving forward in the face of such diversity. This respectfulness in the face of diversity is often reflected in a sense of empath and “trust” (notwithstanding a difference of views) that provides the critical element in successful collaborations.²⁴

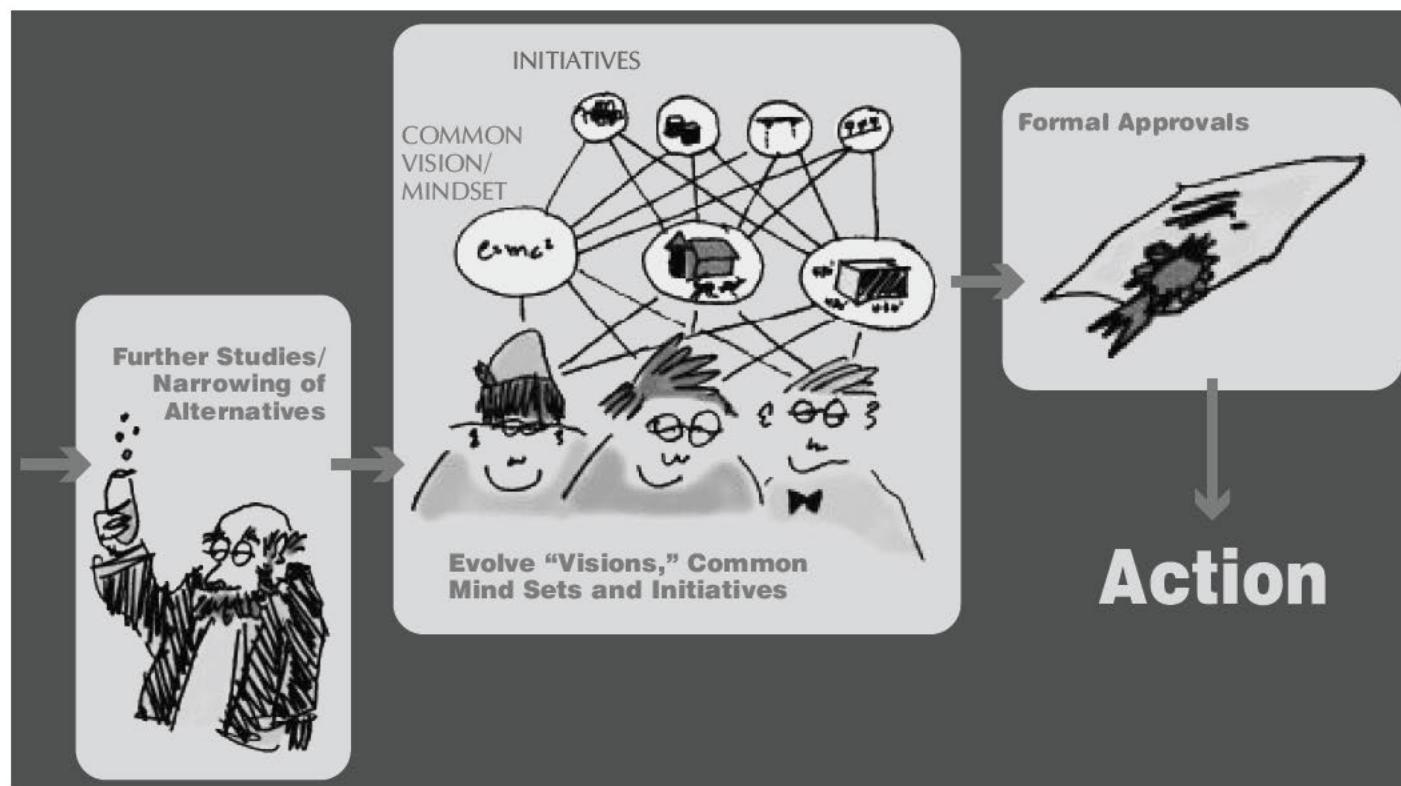
- **Scoping:** “Scoping” is a process that includes the identification and exploration of considerations and concerns of the constituency involved, available information, opportunities, and alternatives (and both their benefits and adverse effects). In turn, it involves a number of practices and principles. For example, it can be difficult to be open and reasonably consider a variety of alternatives that are not one’s own.



- **Leadership:** The increased flow of information within and across boundaries²⁵ does not mean that vertical hierarchies are not important. They are. “Leadership” plays a very important, critical role in the effectiveness of HCP processes. Without adequate leadership, processes can be characterized by hostility and fierce disagreements (and even litigation). And, it is not sufficient for those in leadership to simply direct their different agencies and interests to “work together”. Often the result is a leaderless, listless, group of lower staff members dogmatically clinging to outdated or rigid mandates of their particular agencies, with little empathy or respect for the concerns of other agencies and interests. In contrast, the leadership that is required is ongoing oversight and support in bringing to bear the principles of collaboration and dialogue in the processes of

“dialogue” and the “scoping” of concerns, issues and alternatives.²⁶ This quality of “leadership” is often observed in the active involvement and support from upper management levels to assist their teams or staffs to understand agency interests and mandates. Less apparent is the empathy and “flexibility” to find innovative ways to reconcile various concerns and move forward. The elements of such practices deserve further exploration and understanding, perhaps in relation to the design of a more inter-agency programmatic approach.²⁷

In summary, these multi-agency agreements often reflect complex arrangements crafted utilizing these evolving practices of “dialogue” and “leadership.”



Designation of Innovation Models and Pilots

Drawings by L. Marsh

As suggested, this is a time of experimentation regarding the Future of Habitat Conservation Planning and for the application of the HCP concept more generally. While the San Bruno Mountain HCP has been embraced at the highest levels, further innovation is called for. For example, several Northern California counties have pioneered approaches to integrate ESA and CWA Section 404 requirements and South Florida is exploring collaboration among federal, State and local agencies regarding the restoration of the Everglades. It would be helpful to identify and encourage innovative “pilot” efforts at the national, State and local levels that transcend institutional boundaries and particular concerns (e.g., ecosystems, wildlife, wetlands and streams, transportation, coastal areas, various elements sustainability, such as climate change) in the context of infrastructure and development of various kinds.²⁸

Specific Concerns, Principles, Processes and Programs

Chapter Three:

HCPs AND SIMILAR EFFORTS IN CONTEXT

In General

HCPs are “focused” or “focal point” plans and are not comprehensive. They are focused on wildlife habitat conservation, generally in concert with anticipated human developments and activities.²⁹ Generally, they have focused on a limited number of “Species of Concern” within a “Focused Area” and provide for “Conservation Areas” (generally comprised of “Core Areas” and “Linkages”) and/or “Protocols” related to certain activities (e.g., wind farms within a flyway).

Some suggest that HCPs simply provide the basis for ITPs (focused on providing “take” permits for individual listed species) under the ESA. Others respond that these plans are much broader in effect and provide for the conservation of habitat for “suites of species,” “ecological communities” and “eco-systems,” covering, in some cases, more than a hundred species. Accordingly, from the CEQ Conversation, it became increasingly apparent that we need to understand the workings of the HCP concept in the broader context of local, State and federal programs and practices.³⁰

State and Federal Context

As suggested above, HCPs are not State Wildlife Action Plans, nor are they local General Plans. Only recently have they been the basis for CWA permits. Further, to the extent that they focus on permitting, they are not part of State infrastructure planning,

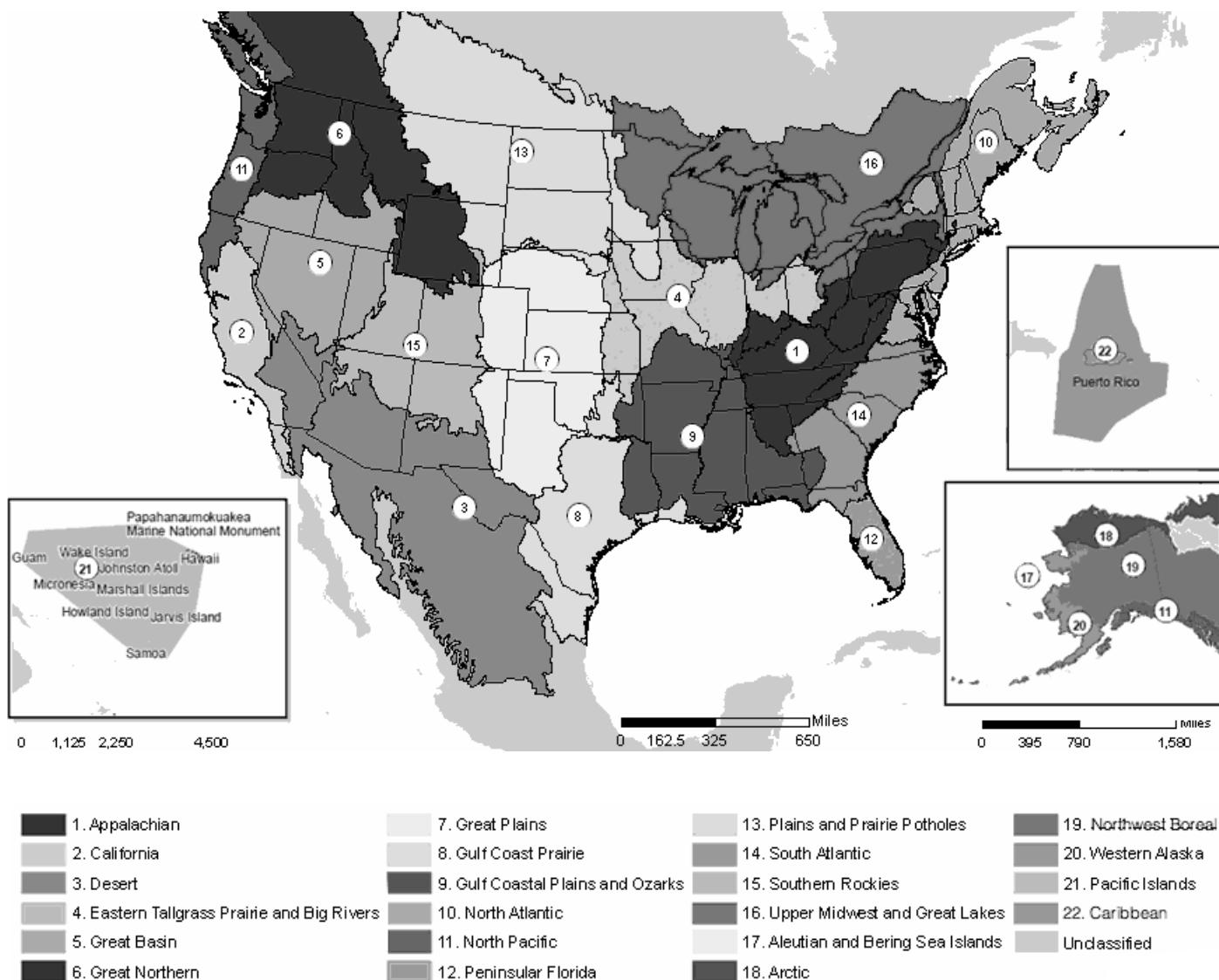
Below: *American Alligator*

The South Florida CERP protect habitats for a range of species.



Photo source: South Florida Water Management District

FIGURE 3.1: DOI - LED CONSERVATION COOPERATIVES



Albers Equal Area Conic NAD83
Produced by FWS, IRTM, Denver, CO
Map Date: 12142011

nor have they enjoyed broad programmatic state or federal funding. Yet, they are increasingly viewed as the major federal and, often, State tool for the conservation of wildlife habitat listed as “threatened” or “endangered” or “of concern” (e.g., in urbanizing areas). HCPs are not the only tool for every circumstance. Rather, the sense from the HCP Dialogue, and particularly the CEQ Conversation, is that there is need for additional thought as to the appropriate role of an HCP in the context of state and local planning and regulations.

In discussing (in the CEQ Conversation), the work on the revised HCP Handbook (due out for comment later this year), it appeared that it would likely focus on the regulatory function of HCPs and USFWS under the ESA. In response, the suggestion was made that HCPs could be viewed programmatically as having not only a regulatory role, but also broader programmatic functions (research, funding, acquisition, etc.) related to wildlife conservation and even the environment generally and, perhaps, other concerns of the federal and State agencies (e.g., under CWA, ESA, NEPA, FLPMA, the National Historic Preservation Act, the National Transportation Act, and the National Water Resources Development Act).

In this regard, there are a number of programs and efforts at the federal and state levels that address the conservation of wildlife and deserve further consideration. For example:

- At the national level, there are 22 regional Landscape Conservation Cooperatives (see Figure 3.1), which are self-directed partnerships, under the leadership of DOI, among federal agencies, states, tribes, non-governmental organizations, universities, and other entities to collaboratively define science needs and jointly address broad-scale conservation issues, such as climate change in a defined geographic area;
- USACE and USBR are authorized to develop Watershed Plans;
- CZMA provides for the development of Special Area Management Plands (SAMPs) and the USACE utilizes SAMPs for CWA Section 404 permitting;
- FLPMA directs BLM to develop Land Use Plans for federal lands which it manages and expressly includes conservation as an objective;
- States and territories are required to prepare State Wildlife Action Plans (“SWAPs”). These plans outline steps to conserve wildlife and habitat before they become too rare or costly to restore. Taken as a whole, they are intended to present a national action agenda for preventing wildlife from becoming endangered;
- In California, local agencies and others may adopt Natural Community Conservation Plans (“NCCPs”) with the intent that such plans will provide the basis for State permits for State-listed species and avoid the need for any further State and federal listing of species as threatened or endangered;^{32,33}
- The California State Strategic Growth Council is working to explore the establishment of a program to develop regional frameworks, plans or guidelines for the conservation of eco-systems and wildlife habitat in the context of infrastructure and other development within the various regions of the State;

- Planning and regulatory commissions have been established with respect to the California Coast (the California Coastal Commission), San Francisco Bay (the San Francisco Bay Conservation and Development Commission) and Lake Tahoe (the Lake Tahoe Regional Planning Agency) to, among other things, conserve natural resources;
- In Florida, the South Florida Comprehensive Everglades Restoration Program (CERP), and other efforts provide a framework for conservation and development in a large portion of South Florida; and,
- The Chesapeake Bay Program and related agreements and institutions have provided for collaboration in the restoration and conservation of the Bay.

Programmatic Approaches – Further Research

In thinking about a “programmatic” approach for addressing wildlife conservation in concert with anticipated infrastructure and development, not only should the HCP model be considered and furthered, but it and its underlying elements (collaboration and the use of geographic-based plans and implementation agreements) may suggest or provide a foundation for other innovative approaches to the broader challenge of providing advance mitigation and conservation of ecosystems in concert with development and sustainability.

In this regard, there are five efforts that deserve significant further study in thinking about how major, large-scale, HCP-like efforts involving multiple agencies and public and private lands and interests might be organized:

- Chesapeake Bay Program and related efforts;
- California Bay-Delta Conservation Plan (“BDCP”),
- Florida Comprehensive Everglades Restoration Plan (“CERP”);
- California Desert Renewable Energy Conservation Plan (“DRECP”); and,
- Efforts to develop State plans to conserve the Greater Sage Grouse and thereby avoid its listing as threatened or endangered under the ESA.

In Summary

These five efforts provide a rich trove of lessons, problems, and solutions. They all constitute, however, progress and provide key elements and learning for the crafting of future habitat conservation planning efforts. The major insight was that they all involved programmatic elements (e.g., science, mapping, management/implementation plans, funding, etc.) with participation by the various constituencies of agencies and interests.



Case Studies:

FIVE NATIONAL EFFORTS THAT DESERVE FURTHER STUDY

Above: One of many species protected in the Patuxent River Park in Upper Marlboro, Md. by the Chesapeake Bay program.
Photo by Anne Arundel
Photo source: Chesapeake Bay Program.

CASE STUDY 1 | Chesapeake Bay Program

CASE STUDY 2 | California Bay-Delta Conservation Plan (“BDCP”)

CASE STUDY 3 | Florida Comprehensive Everglades Restoration Plan

CASE STUDY 4 | California Desert Renewable Energy Conservation Plan (“DRECP”)

CASE STUDY 5 | Greater Sage-Grouse Plans



Above: Wetlands

Image North of the Nanticoke Wildlife Management Area in Wicomico County, Maryland.

Photo by Matt Rath

Photo source: Chesapeake Bay Program.

CASE STUDY 1

CHESAPEAKE BAY PROGRAM

The Chesapeake Bay is the largest of more than 100 estuaries in the United States. The Chesapeake Bay watershed includes parts of six states; Delaware, Maryland, New York, Pennsylvania, Virginia and West Virginia and the entire District of Columbia. There are nearly 1,800 local governments in the Bay watershed, including towns, cities, counties and townships.

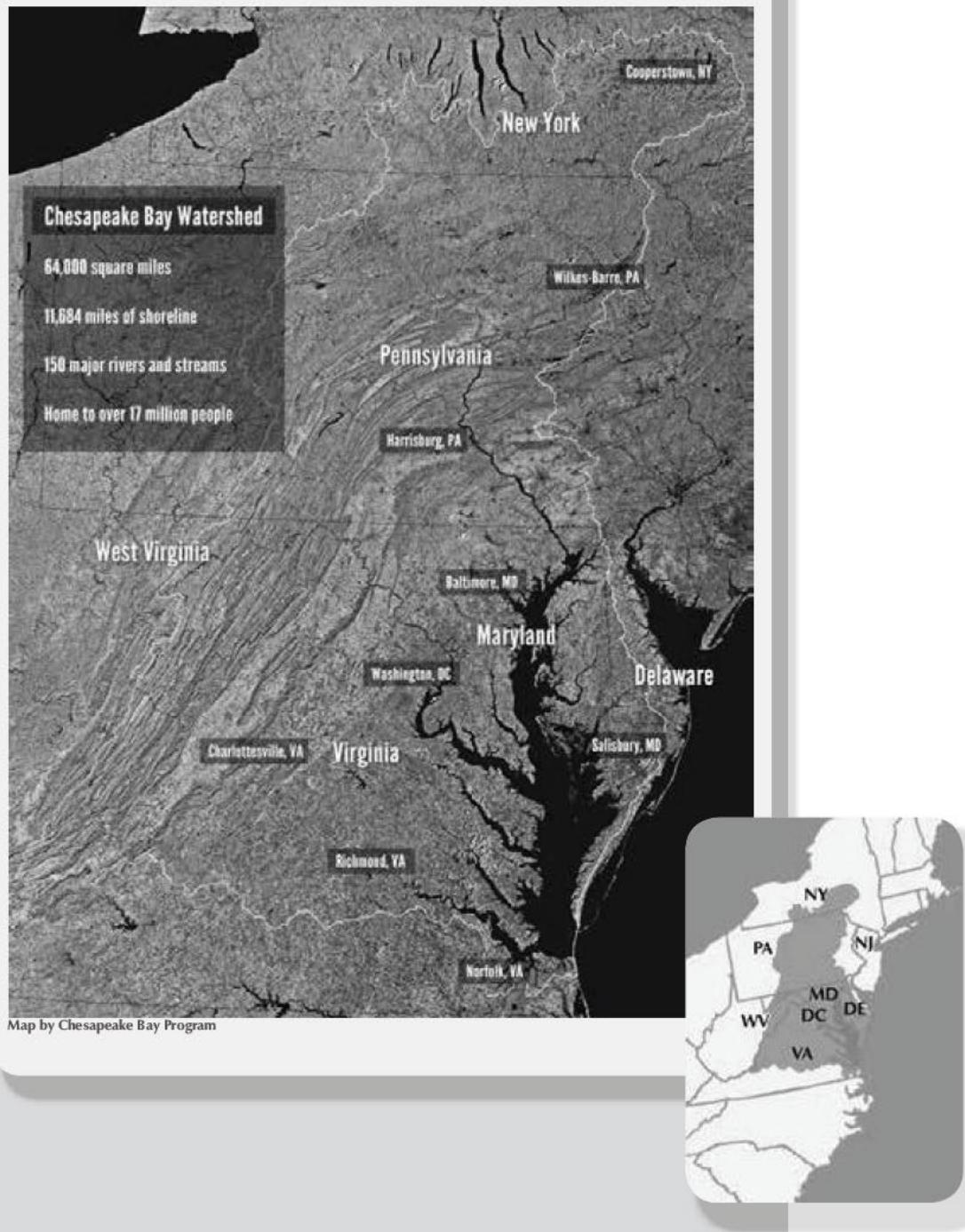
The Chesapeake Bay was the first estuary in the nation to be targeted for restoration as an integrated watershed and ecosystem. The Chesapeake region is home to at least 29 species of waterfowl. Nearly one million waterfowl winter on the Bay approximately one-third of the Atlantic coast's migratory population. The birds stop to feed and rest on the Bay during their annual migration along the Atlantic Flyway. Forests cover 58 percent of the Chesapeake Bay watershed. The region loses about 100 acres of forest each day to development.

Since the formation the Chesapeake Bay Foundation in 1983, its partners have used written agreements to guide the restoration of the nation's largest estuary and its watershed. Setting goals and tracking progress holds partners accountable for their work, while developing new agreements over time ensures our goals are aligned with the best available science to attain restoration success. In 2009, it became clear that a new agreement was needed that would accelerate the pace of restoration and align federal directives with state and local goals to create a healthy Bay. Bay Program partners gathered input from citizens, stakeholders, academic institutions, local governments and more to draft an inclusive, goal-oriented document that would address current and emerging environmental concerns.

- On June 16, 2014, the Chesapeake Bay Watershed Agreement was signed. Signatories include representatives from the entire watershed, committing for the first time the Bay's headwater states to full partnership in the Bay Program. This plan provides for collaboration across the Bay's political boundaries and establishes goals and outcomes for the restoration of the Bay, its tributaries and the lands that surround them.
- In a letter, partners promised to openly and publicly engage watershed citizens in implementing these goals and outcomes. Partners also identified the management strategies in which they planned to participate.³⁴ There has also been participation by a myriad of other organizations and interests (e.g., the Chesapeake Bay Conservancy, a non-profit organization, was formed in support of the broader efforts of the Chesapeake Bay Program).

This raises questions regarding the role of inter-state compacts, multiple agency collaboration, decisional voting arrangements and the use of a variety of different forms of organization to reach conservation objectives.

FIGURE 3.2: CHESAPEAKE BAY PROGRAM AREA





Map by Bay Delta Conservation Plan



Above: San Joaquin Kit Fox

Photo source: USFWS / Bay Delta Conservation Plan

Below: Why BDCP is Important for California

CASE STUDY 2

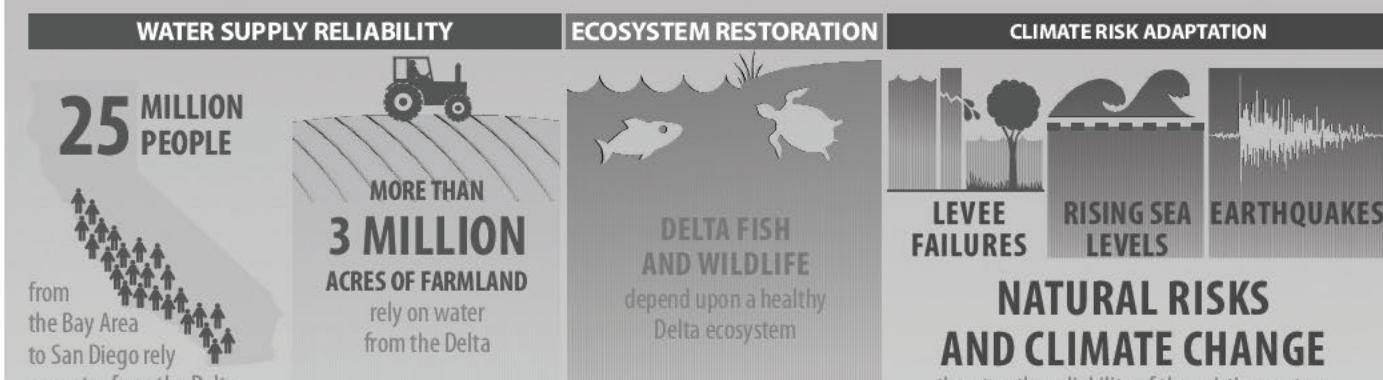
CALIFORNIA BAY DELTA CONSERVATION PLAN (BDCP)

One half of California's fresh water flows through the 1,150 square mile "Delta" area in northern California. Historically, it emptied entirely into San Francisco Bay and then into the Pacific Ocean. It supports a rich eco-system, including threatened and endangered species, navigation and agriculture. In addition, its waters have been diverted to agriculture in the San Joaquin Valley and pursuant to a State Water Plan adopted in the 1960's to an urbanizing Southern California. In 1982, an initiative, "Proposition 9", proposing the construction of a peripheral canal skirting the Delta was defeated, leaving in its wake an on-going conflict among Northern California farmers, Southern California developers and environmentalists focused on the allocation of water and the conservation of species dependent upon continued natural water flows through the Delta.

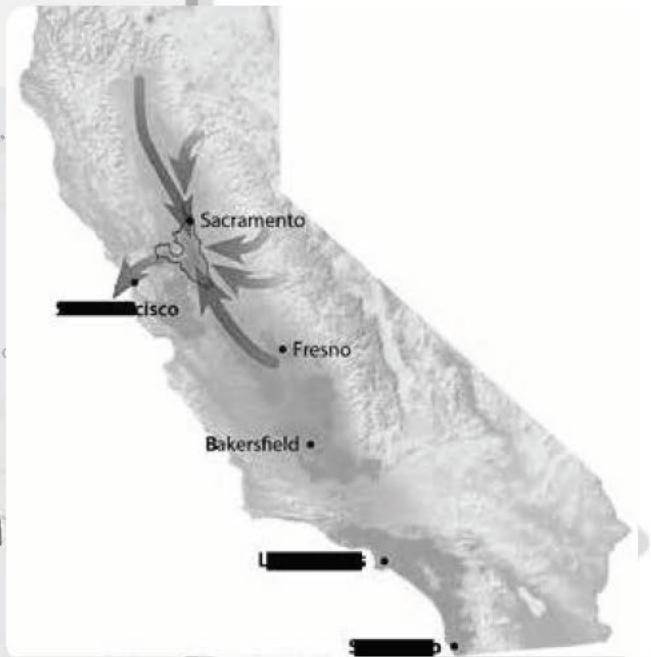
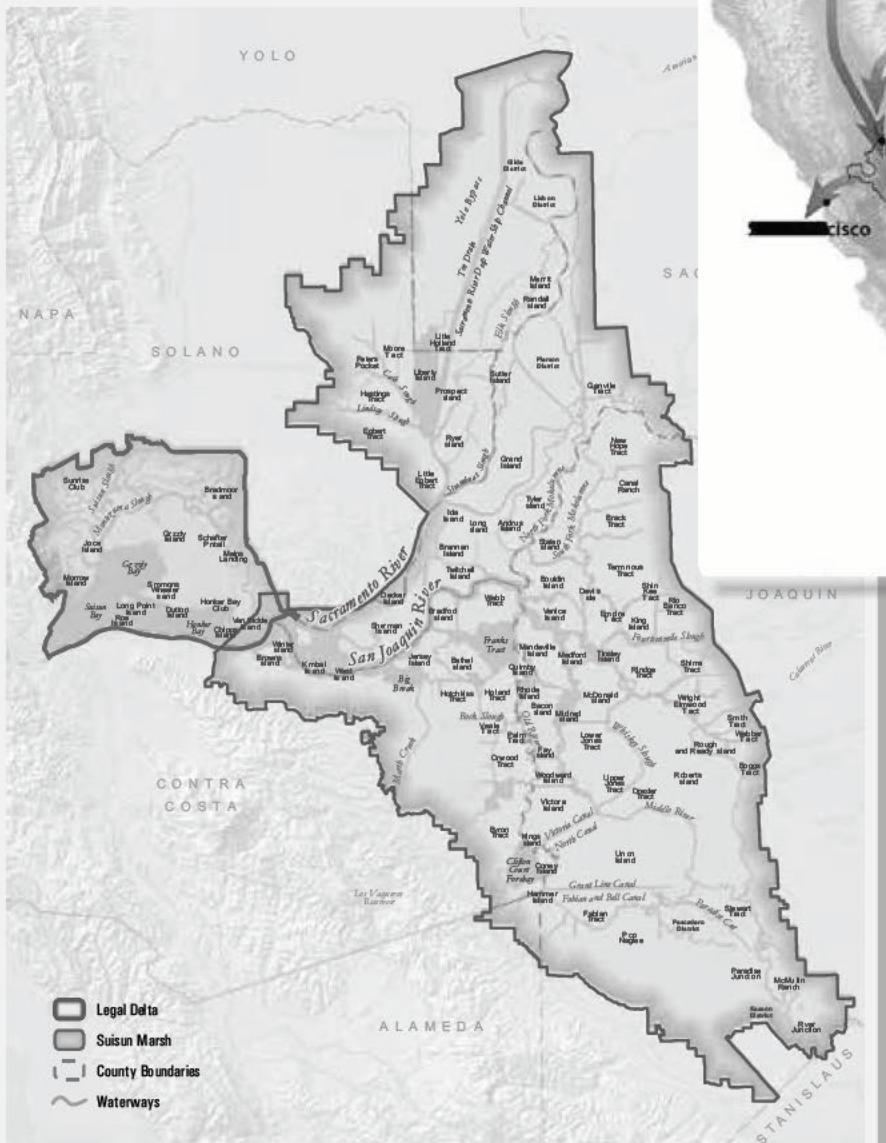
Various efforts followed with the purpose of developing a plan that would reconcile these competing interests and concerns. In 1994, in part based on the HCP and HCP-like experiences, Secretary of Interior Bruce Babbitt and Governor Pete Wilson, established a 25 member State-federal Task Force (the CALFED Water Quality and Ecosystem Restoration program). This commenced a complex series of efforts to manage the Delta water for purposes of providing increased and reliable water supplies to the south and for Delta ecosystem restoration and for the establishment of State institutions necessary to manage such an effort. The Delta Stewardship Council and Delta Plan (adopted by the Council in 2013) resulted from this effort. Currently these two elements, water supply and ecosystem restoration, are being addressed separately (as the "California WaterFix" and "California EcoRestore"), with the intention of fulfilling the requirement of the 2009 Delta Reform Act to meet the co-equal goals.³⁵

Clearly, the California Delta is at the center of a political vortex of diverse interests; however, in thinking about the form and use of HCPs or HCP-like approaches, this saga deserves significant further review.

The BDCP is Important for California



**FIGURE 3.3: CALIFORNIA BAY DELTA
CONSERVATION PLAN AREA**





Above: *Limpkin*

Many animal habitats were preserved through the South Florida Task Force.

Photo source: South Florida Water Management District.



Above: *Kissimmee River Aerial View*

Photo source: South Florida Water Management District

CASE STUDY 3

FLORIDA ECOSYSTEM RESTORATION TASK FORCE

The South Florida Ecosystem Restoration Task Force was established by section 528(f) of the Water Resources Development Act of 1996.³⁶ The Task Force consists of 14 members from four sovereign entities: seven federal, two tribal, and five state and local government representatives.

The mission of the Task Force is to restore the ecosystem encompassing nearly four million acres of the southern tip of the Florida peninsula, the Everglades and the greater Everglades ecosystem (spanning from the Kissimmee River basin north of Lake Okeechobee to Florida Bay) – the world's largest intergovernmental watershed restoration effort (See Figure 3.4). Its specific duties are to:

- Coordinate the development of consistent policies, strategies, plans, programs, projects, activities, and priorities addressing the restoration, preservation, and protection of the South Florida ecosystem;
- Exchange information regarding programs, projects and activities of the agencies and entities represented on the Task Force to promote ecosystem restoration and maintenance;
- Facilitate the resolution of interagency and intergovernmental conflicts associated with the restoration of the South Florida ecosystem among the agencies and entities represented on the Task Force;
- Coordinate scientific and other research associated with the restoration of the South Florida ecosystem; and,
- Provide assistance and support to agencies and entities represented on the Task Force in their restoration activities.

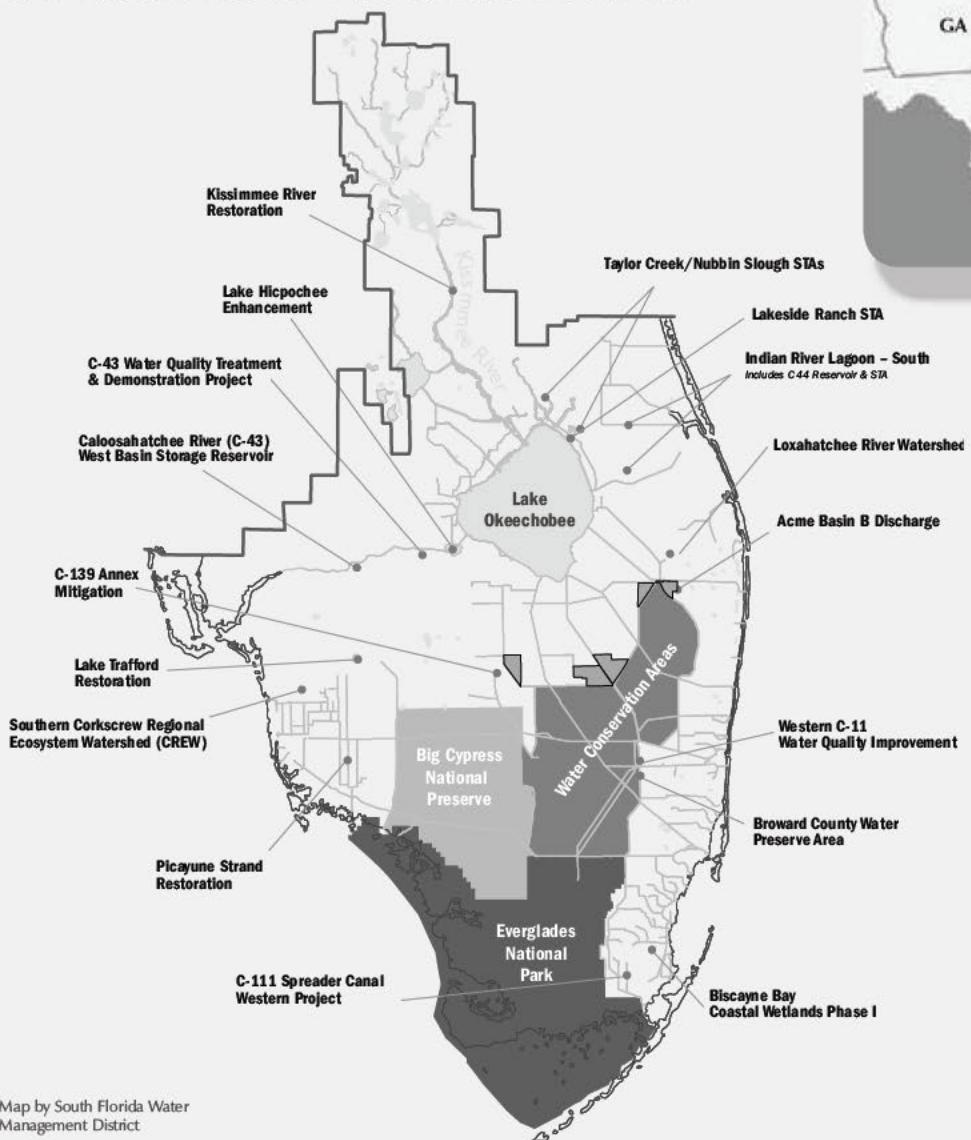
In addition to the Task Force, there is both a Working Group and a Science Coordination Group. The Task Force works by consensus or where consensus cannot be reached, by a two-thirds majority.

The Task Force focuses on a group of specific projects focused on the management of water and other efforts contributing to the restoration of the eco-system of South Florida.

The federal legislation that authorized the Task Force, together with anticipated funding of \$8 Billion dollars of federal, State and other funding, provided an effective framework for the effort and appears to provide valuable suggestions for the questions raised by the HCP Dialogue.³⁷

This study is important in that the current federal legislation and the resulting Task Force, replaced a somewhat dysfunctional effort that relied on a Governor's Commission in partnership with a federal Task Force (resulting from concerns over compliance with the Federal Advisory Committee Act). Further, the study needs to be reviewed in the context of the history of the State's effort to conserve its wildlife habitat through regulation and innovative funding approaches (e.g., utilizing proceeds from real estate transfer taxes as the basis for obtaining funding for ecosystem conservation).

FIGURE 3.4: COMPREHENSIVE EVERGLADES RESTORATION PLAN COMPONENTS





Map by The Renewable Energy Action Team



Above: A desert tortoise emerges from its burrow.

Photo source: Arizona Game and Fish Department



Above: View of Cadiz Valley
Image of the DRECP landscape

CASE STUDY 4

CALIFORNIA DESERT RENEWABLE ENERGY CONSERVATION PLAN ("DRECP")

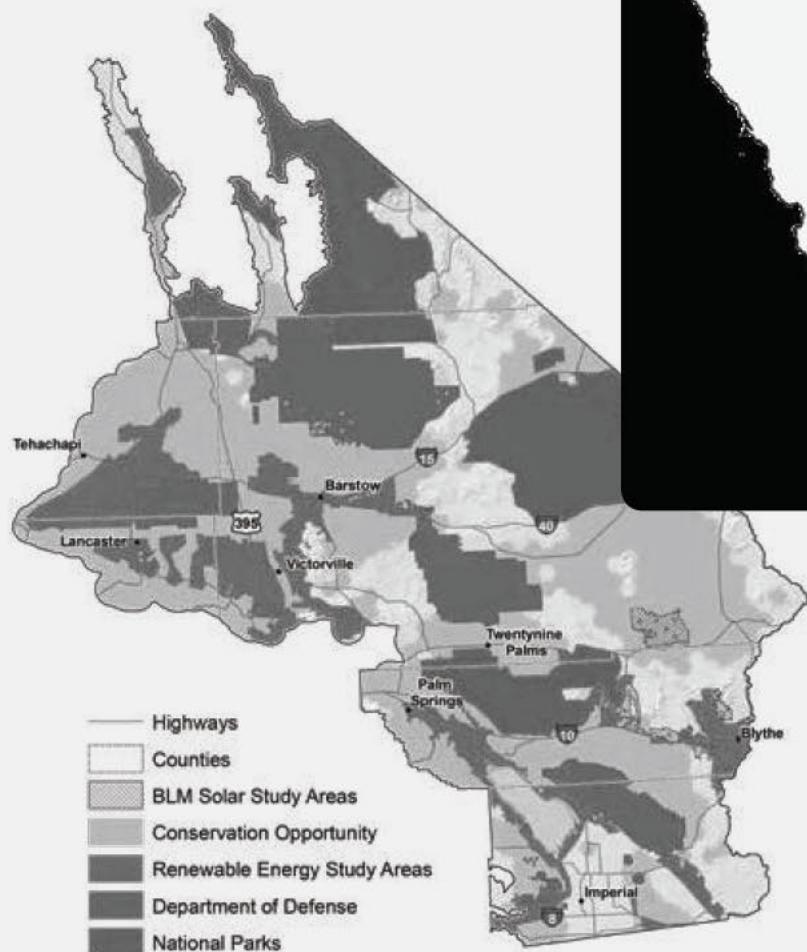
The DRECP effort commenced in 2008 under an agreement among four key California State and federal agencies (California Energy Commission (CEC), CDFW, BLM and USFWS) the Renewable Energy Advisory Team ("REAT"), to expedite the location of renewable energy projects in the 22.5 million acre California Desert in concert with ecosystem conservation (focused primarily on the habitats of threatened or endangered species under State or federal law). In 2015, a draft DRECP was published, with more than 10,000 comments in response (many of which were critical of the plan). The REAT then suspended further processing of the DRECP in favor of a staged process with BLM leading off with the adoption of a Land Use Plan Amendment for the same purpose covering 16.5 million acres of federal lands under its jurisdiction within the Desert.

Comments made on these efforts included the following:

- The DRECP and California Delta efforts demonstrate that such large-scale HCPs are simply unworkable -- primarily citing both the complexity of the biology and the multitude of agencies and interests involved. To others, this called out the importance of thinking through the process and organizational structure so as to avoid such outcomes.
- The effort resulted in the development of key information, processes, systems and protocols that would allow such efforts to move ahead more quickly and competently.
- Key players were initially left out (e.g., the DRECP failed to include the counties as major players from an early point in the effort).
- The DRECP time-line was driven by the interest of the agencies in developing underlying processes (e.g., informational processes) rather than focusing on accelerating the early development of renewable energy resources.

These points are currently the subject of further discussions with key participants in the DRECP process. All of this suggests that this is a valuable case study that deserves further study.

**FIGURE 3.5: CALIFORNIA DESERT
RENEWABLE ENERGY CONSERVATION
PLAN AREA**



Map by renewable Energy Action Team





Above: Sage Grouse in Lek

Many birds and mammals depend on sagebrush ecosystems in the western United States for survival. In the last century, drastic changes have resulted in alteration and fragmentation of sagebrush communities, negatively affecting more than 350 species of plants and animals.

The BLM strategy to conserve this habitat emphasizes a cooperative approach and provides a framework for implementation.

Photo source: the Bureau of Land Management Oregon and Washington.

CASE STUDY 5

GREATER SAGE-GROUSE PLANS

Greater sage-grouse habitat covers 165 million acres across 11 states in the West; a loss of 56% from the species' historic range. At one time, the greater sage-grouse population likely numbered in the millions, but is estimated to have dwindled to 200,000 to 500,000 individuals range-wide. The lands involved are currently the focus of major oil and gas operations.

In response, in 2015, the USFS and BLM finalized land use plans that will conserve key sagebrush habitat, address identified threats to the greater sage-grouse and promote sustainable economic development in the West. The plans were a critical component that assisted the USFWS to conclude that the rangeland bird no longer warrants protection under ESA.

- As part of an unprecedented and proactive partnership to conserve the uniquely American habitat that supports iconic wildlife, outdoor recreation, ranching and other traditional land uses, BLM, USFS, USFWS, and the Natural Resources Conservation Service continue to work together to ensure the conservation of the West's sagebrush habitats and with the States as BLM and USFS finalize plans to coordinate their conservation efforts. The involved States have management programs to address the conservation of the bird and significant amounts of its habitat.
- These plans focus on the conservation of "Priority Habitat" areas that have been identified as having the highest value in maintaining the species and its habitat. Land use measures in Priority Habitat are designed to minimize or avoid habitat disturbance. Within Priority Habitat, specific areas have been identified as Sagebrush Focal Areas. The Sagebrush Focal Areas are important landscape blocks with high breeding population densities of sage-grouse and existing high quality sagebrush. The plans also designate General Habitat Management Areas, which provide greater flexibility for land use activities.

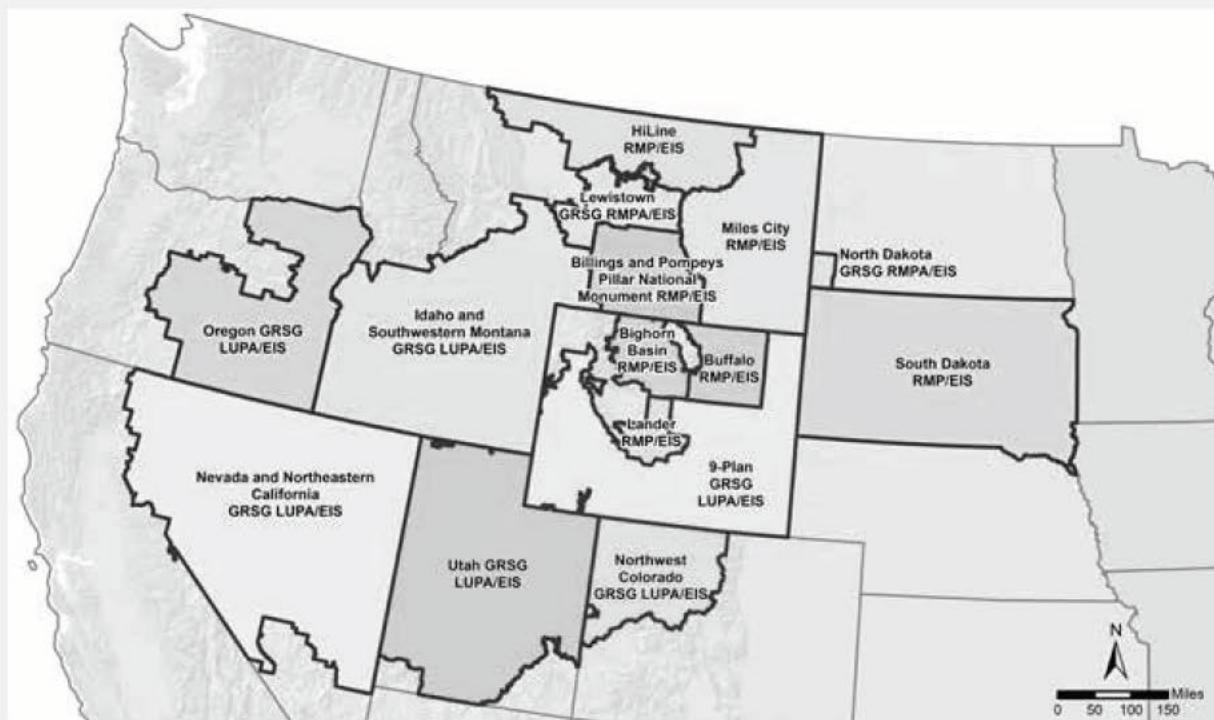
These plans contain three common approaches:

- **Minimizing new or additional surface disturbance:** The plans reduce habitat fragmentation and protect intact habitat by implementing surface disturbance caps on development, minimizing surface occupancy from energy development, and identifying buffer distances around leks - areas critical to the sage-grouse life-cycle.
- **Habitat Enhancements:** Improving habitat condition while restoring lost sagebrush habitat can be difficult in the short term; it is often possible to enhance habitat quality through purposeful management. Where there are unavoidable impacts to habitat from development, the plans will require mitigation efforts to enhance and improve sage-grouse habitat.

- Reducing rangeland fire threat Rangeland fire can lead to the conversion of previously healthy sagebrush habitat into non-native, cheatgrass-dominated landscapes. Experts have identified fire as one of the greatest threats to sagebrush habitat, particularly in the Great Basin region of Idaho, Utah, Nevada, Oregon and California. The plans seek to fight the spread of cheatgrass and other invasive species, position wildland fire management resources for more effective rangeland fire response, and accelerate the restoration of fire-impacted landscapes to native grasses and sagebrush.

Individual State plans contain variations where different approaches or priorities were consistent with overall conservation objectives. The plans honor all valid, existing rights, including those for oil and gas development, renewable energy, rights-of-way, locatable minerals, and other permitted projects.³⁸

FIGURE 3.6: GREATER SAGE-GROUSE PLAN AREAS



Developed in coordination with working groups (comprised of BLM and other federal, local and State agencies and landowners). Greater sage-grouse habitat covers 165 million acres across 11 states in the West, a loss of 56% from the species' historic range. At one time, the greater sage-grouse population likely numbered in the millions, but is estimated to have dwindled to 200,000 to 500,000 individuals range-wide.³⁹



Above: Signing of the Santa Ana River Watershed Group MOU

The signing provided for watershed-wide Multi-Agency collaboration. At the table: the EPA Regional Administrator, Assistant and Deputy Secretaries of Agriculture, Assistant Secretary of the Army for Civil Works, a Riverside County Supervisor, General Manager of the Santa Ana Watershed Project Authority (the five water agencies) and General Manager of the Orange County Sanitation District.

Photo by Blake Anderson, General Manager, Orange County Sanitation District.

Multi-agency Coordinated Permitting and Programs

HCP applicants comment that issuance of an incidental take permit (ITP) under section 10 of ESA does not constitute a comprehensive, “one-stop” permitting procedure, notwithstanding the emphasis on landscape-scale planning, presumably to include environmental media (air, water) other than wildlife habitat. USFWS regulations already allow the use of HCPs for compliance with the Migratory Bird Treaty Act (MBTA) for listed birds. USFWS guidance also allows the combination of HCPs with Eagle Conservation Plans under the Bald and Golden Eagle Protection Act. In some States such as California, Washington, and Massachusetts, HCPs are integrated successfully with State endangered species permitting requirements. HCPs are flexible enough to allow greater permit coordination or integration that would make them more attractive to applicants. In 2012, the first regional HCP was integrated in California with a regional general permit under the Clean Water Act (Section 404)⁴⁰, which is administered by the USACE and EPA. Four other regional HCPs in California are pursuing the same CWA integration but they are experiencing technical and policy challenges.⁴¹ Integration of CWA Section 401, which is administered by the States and EPA may be the next step. Can agency guidance be revised to better facilitate integration of ESA and CWA compliance on a regional scale? There is flexibility in the regulations for implementing CWA Section 404, with a variety of integrated approaches to permitting, but new guidance would assist in providing additional support to agency field staff to do integrated approaches specific to HCPs and CWA Section 404.

It has been suggested that an approach to better implement landscape-level approaches would be for the federal government to delegate to States greater authority with respect to wildlife habitat conservation. Others have expressed concern regarding the conservation focus of the State programs. In this regard, USFWS, with some opposition, has recently proposed that its listing criteria be revised to include consultation with affected states during the review of listing petitions. This recognition of States’ expertise could be further enhanced through more rigorous implementation

of the PECE criteria,⁴² and devolution to qualifying states of greater responsibility for species and habitat protection by means of cooperative agreements pursuant to Section 6 of the ESA or other provisions (e.g., Sikes Act agreements).

In States with their own species protection programs, such as California, USFWS could eliminate overlapping or redundant requirements, and consider whether to delegate responsibility for implementation of ESA as long as States meet minimum requirements and demonstrate their ability to uphold federal law. There are excellent examples of the federal government delegating to states the implementation of federal environmental regulations. More to the point, FHWA delegates to some State DOTs considerable authority with respect to compliance with NEPA, CWA, and the National Historic Preservation Act. Some State DOTs also have been delegated responsibility for ESA compliance. On the other hand, it has been suggested that the delegation of federal ESA responsibility to a State is problematic in that they see some State regulations as far less stringent than their federal counter-parts. (See also endnote 7 regarding the Western Governors Association Initiative.)

Delegation of conservation to state may be effective programmatically or in more area-focused arrangements.

Further, if such delegation were to occur, the differences in the regulatory approaches would need to be considered. For example, several mechanisms exist to obtain pre-listing assurances for candidate species in the event that they become listed. In this regard, Candidate Conservation Agreements with Assurances (CCAAs) are becoming more popular as a tool for non-federal participants to gain regulatory assurances that conservation measures adopted in the Agreement will be sufficient to obtain take authorization once the species is listed. One challenge in the use of this tool is that it often has a higher conservation standard than what is required by an HCP once a species is listed. This difference may provide disincentives for its use and cause some applicants to wait instead until the species is listed, defeating the purpose of using CCAAs to assist in preventing listings.

USFWS has also proposed to engage private landowners in the conservation of candidate species that have not been listed. In return for the adoption of approved conservation measures, landowners would be given tradable “credits” to be recognized in the event of a listing as an offset to post-listing requirements, or traded to third parties in the discharge of their ESA mitigation obligations. Although the proposal was made in November 2014, and widely applauded, it has not yet been adopted. In fact, many HCPs include non-listed species, with the federal government stating that if one of these species becomes listed during the permit period, then the conservation measures for that species as detailed in the HCP will be deemed sufficient and the Incidental Take Permit will extend to that species.

CONSERVATION, FUNDING AND FINANCING

It is generally agreed that it makes sense for the lands needed for conservation to be acquired at an early point (e.g., before title of, and regulatory authority over, the lands are fragmented and there is an increase in their economic value as a result of anticipated development). The question has been how are those acquisitions to be funded or financed?

Generally, wildlife conservation is “funded,” directly from federal, State and local taxes (e.g., federal fishing and hunting gear taxes), State taxes (e.g., those levied by Florida) on the transfer of real property, and local sales taxes (e.g., those levied by the California counties of San Diego and Orange), property taxes (e.g., tax increment financing under recent California and Texas legislation) and impact (mitigation) or “in lieu mitigation” fees, charges and requirements with respect to activities and mitigation required with respect to specific projects.⁴³

The major problem is the paucity of funds for advance acquisition of lands on a landscape level. Such funding is critical to economically mitigate or offset the impacts of the anticipated infrastructure and development (and, any additional lands that should be acquired for “conservation” by the public over and above that required for the compensatory mitigation of projects). And, it is anticipated that such advance funding is to be reimbursed later by mitigation fees and charges. This is not dissimilar to the federal New Town Program of the late 1960’s - early 1970’s, focusing instead in this case on conservation (but with possible development in mind as well).⁴⁴

It has been suggested that it is sufficient to be able to state in advance that certain lands must be conserved and, in effect, to make them available for conservation by regulation. The problem is that in some situations (e.g., urbanization), uncertainty revolves around which lands should or can be conserved. For example, where the lands have been highly subdivided, the conservation of habitat often calls for careful planning and prioritization to determine which portions can be developed and which should be conserved.

The difficulty increases with respect to private property. For example, a designation of such property for conservation raises issues of a “taking” in violation of federal and some state constitutions. Generally the sentiment of local property owners and elected officials has been that the acquisition of privately owned lands for conservation calls for willing sellers and sufficient funds to purchase the lands. One alternative has been for the agency with land use authority to simply zone the land for low-density development (e.g., one residence per 40 acres). Clearly, these issues are both politically sensitive and legally complex.

In other cases (e.g., agricultural lands that are not within the path of urbanization or timberlands where urbanization or land-scale mining is unlikely to occur), the use of the lands may be more readily coordinated with needed wildlife conservation and, as a result, there is less need for such early acquisition funding. However, even in these cases, it may be desirable to put in place conservation easements.

As to the lands acquired early for conservation, there are a number of questions to be addressed. For example, what are the available sources of funding for acquisition,

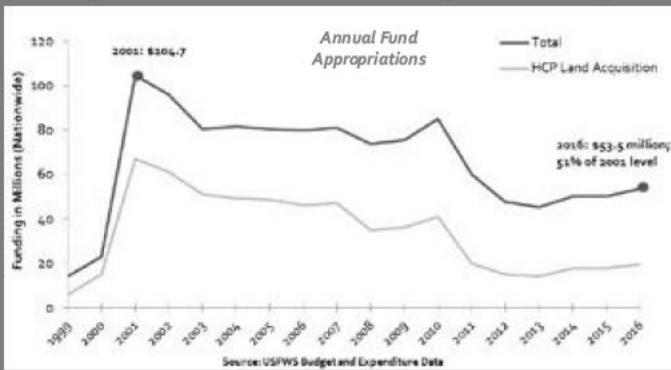
Below: Why the Fund Allocation Needs to Increase

The proposed partial restoration of the Fund to \$85 million is still much less than the funding provided during the period 2001-2010. Grant requests far exceed the current allocation. The Fund needs to increase substantially in future years to catch up and keep pace with the expected growth in grant requests.

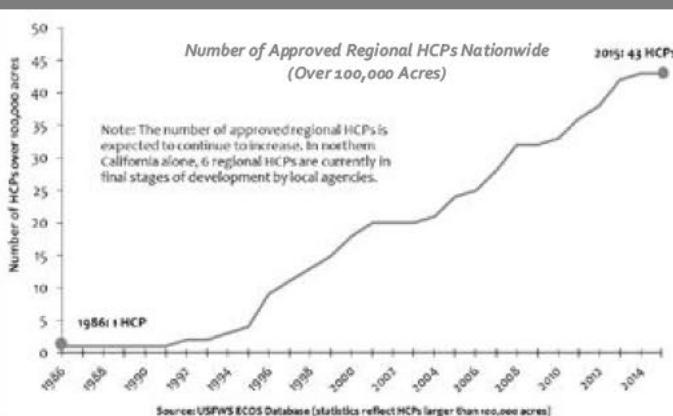
Charts provided by John Hopkins, Director, The Habitat Conservation Planning Coalition and National Habitat Conservation Planning Coalition

Why Fund Allocation Needs to Increase

Funding Levels have decreased dramatically over the last 6 years



Number of approved HCPs needing funding continues to grow



especially with respect to conservation lands that are anticipated to be used in the future as compensatory mitigation? Or for lands that are required for advance compensatory mitigation, does it make sense, in certain circumstances, to acquire additional lands for conservation which may be over and above that required as advance mitigation? Additional lands can augment the natural resource values of mitigation lands, such as by providing corridors for connecting mitigation parcels, adding to the land area of mitigation parcels and thus increasing the effectiveness of the conservation provided, and by buffering mitigation parcels from effects of nearby land uses. Further, in some cases, the lands to be conserved may provide natural landscapes or value to related, anticipated urban development and the burden of their conservation may be appropriately assessed to such urban development.

Lands Available for Conservation

In thinking about a programmatic view, it is important to keep in mind, the nature of the lands involved and, in particular, the extent of public lands available or appropriate for conservation.

There is a critical need for “advance mitigation arrangements” with the provision of mitigation credits for future individual projects.

Federal Lands

One-third of the Nation’s lands remain in federal ownership after significant grants and conveyances in connection with the admission of various states; to allow for mining and timber production and homesteading; to promote and provide highways, canals and railroads; and to allow the productive development of swamp and overflowed lands and other lands. Increasingly, lands have been reserved and set aside for parks, recreation and the conservation of wildlife. The question of the federal contribution to future wildlife conservation in the implementation of HCPs, both in the form of funding and land, is important and a matter of federal policy as we move forward with solar and wind energy projects, inter-state pipelines and transmission corridors, high-speed transportation corridors, oil and gas projects and the development of housing and other infrastructure for our future population.

An initial question related to lands in public ownership is: what portion should be set aside for conservation of wildlife habitat? And, how should that initial allocation be related to the provision of public lands as compensatory mitigation? This is an inquiry that is broader than the question of whether and to what extent may or should public lands be utilized as compensatory mitigation. Clearly, in crafting regional or area-wide HCPs in the past, public lands have been considered in determining the lands to be conserved in the future. Generally, it has been suggested in the past that the financial burdens of HCPs for urbanizing areas should be shared equally (with contributions of funding and land) among local, state and federal sources.

In this regard, a more focused and key issue has been whether and how, e.g., federal lands can and should be available as compensatory mitigation for impacts and effects from activities on private or other public lands. And, whether the conservation of federal lands can provide “durable” mitigation. Generally, in determining compensatory mitigation, it has been suggested that compensatory mitigation must be in place for the life of the impacts for which the mitigation is provided, including the time required for the restoration of the impacted habitat.

It is clear from efforts to address the conservation of the Greater Sage-Grouse and with respect to the DRECP, federal lands, in addition to state and private lands, could play a key role in the long-term the conservation of wildlife habitat and in compensating for the impacts of infrastructure development. In this regard, Sikes Act Agreements recently have been entered into by CDFW and BLM in the California Desert that



Above: Cadiz Valley
View across the Cadiz Valley in eastern San Bernardino County.
Photo by Chris Clark
Photo source: KCETlink

provide for the cooperative conservation of lands comprising a BLM grazing allotment voluntarily relinquished by the rancher (permanently ending the grazing of the lands involved). The conservation value of the relinquishment would then provide compensatory wildlife habitat mitigation as required by the CDFW in connection with the impacts of a proposed renewable energy project.

This underscores the desirability of viewing conservation programmatically and more broadly - to look at wildlife conservation as transcending ownership and governance boundaries. Further, the considerations and interests involved are not just related to infrastructure/development and habitat, but, rather, include other considerations and concerns, such as those related to energy, water and air (including climate change) "sustainability", and other resources and values.⁴⁵

State, Local and Other Public Lands

There are a broad range of lands that are held in public ownership, including, for example, lands provided to States upon their admission to the Union, open space lands held by local agencies and public agencies in connection with development, rights-of-way of various sorts, lands acquired as the result of a failure to pay property taxes, waters and waterways, etc. These lands may or may not be acceptable as "mitigation" for project impacts, and in either case may add to a conservation reserve.

There are other government and privately owned lands (including, e.g., allotments and rights-of-way overlying BLM lands) that could be available for wildlife conservation in whole or in part through the use of easements, agreements and other similar arrangements.⁴⁶ In many cases the conservation of wildlife habitat can be coordinated with other uses of the lands. These lands could be mapped and catalogued with respect to their potential value for habitat conservation.⁴⁷

In thinking about the planning for the conservation of state and privately owned lands, there are several important considerations. In some cases, the lands may be islands in a sea of federal or other lands, reflecting their character as lands provided to a state in connection with its admission to the Union, or as grants to promote railways or canals (in the form of alternate sections of lands), or lands patented in large-scale grants to private owners under various treaties (e.g., the Treaty of Guadalupe Hidalgo), in some cases in excess of 100,000 acres, some of which were subsequently ranched (e.g., Visitacion, Tejon, Irvine, and Hearst ranches). These ranches have been the subject of HCPs and similar arrangements. Often, however, many of the grants, to railroads and to states, are in a checkerboard-like configuration, making development difficult and promoting their use as conservation lands (e.g., the Cadiz Conservation Bank in eastern San Bernardino County).

It is important to know the extent and nature of private, local, State and federal lands related to any proposed HCP effort.

Infrastructure, Transportation Facilities, Pipelines, Transmission Lines, Renewable Energy Facilities and Oil and Gas Infrastructure

Various kinds of infrastructure can be designed and used in concert with wildlife conservation. In some cases, such as the NiSource pipeline, HCPs have been utilized to obtain permits under ESA. In others, such as the Mid-west wind farms, HCPs are being considered; however, it seems that because of the lack of anticipated land coverage, they would be better addressed using a set of approved protocols or general permit. Solar infrastructure presents a more concentrated land use (normally, 250 – 600 acres) which have been the subject of individual project ITPs. Oil and gas infrastructure provides yet a different infrastructure configuration and has been the subject of area-wide HCPs (e.g., in the Bakersfield and San Joaquin Valley HCPs) and the State Plans for the Greater Sage-Grouse.

In all of these cases, there is a significant opportunity to address ecosystem and habitat conservation together with the required infrastructure.

Agricultural Lands

Agricultural lands present a significant opportunity to coordinate farming and habitat conservation activities. Further, wildlife habitat can be enhanced in coordination with agriculture activities. This provides not only mitigation for such agricultural uses, but also provides to the farmer or rancher the opportunity to coordinate agricultural uses with conservation, providing the farmer with mitigation credit that can be sold and applied as mitigation for other projects and uses.

Below: Irrigation in Utah
Photo by Danny Hart
Photo source: USEPA



Allocating the Burden

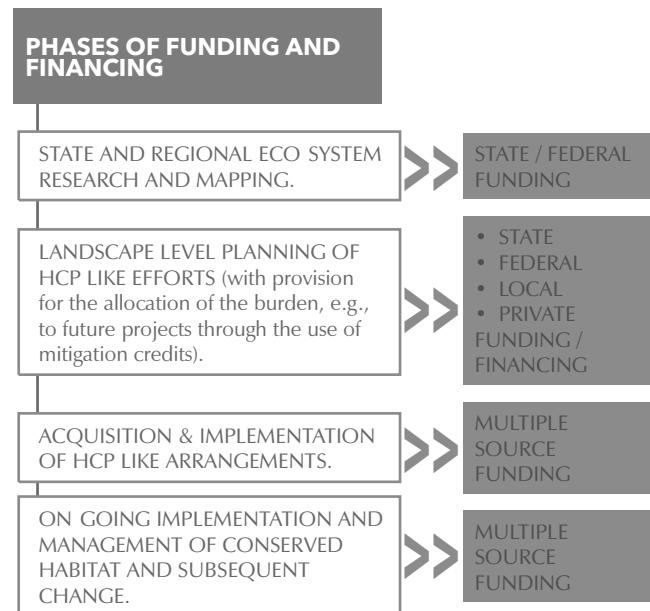
It is critical to evolve from fixed-state plans to strategies and evolving programs.

Ultimately, the benefits and burdens of conservation are shared among public and private interests, but the burdens are usually imposed in a focused manner on “future” private development (as opposed to the owners of lands previously developed and impacting habitat of the same character).⁴⁸ A difficult question is how the burden is to be allocated. The answer goes to the character of the private property and the relative duty that attends private and public lands to bear the burden of conservation, which has become increasingly of concern.

With respect to the “public” share, the question goes to the appropriate allocation of the burden of conservation among various “publics” (e.g., the public within the local area, the region, the State or the Nation or those receiving certain services – water, transportation, energy, etc.).

This is a very broad topic and deserves significant further consideration.

Funding of HCP Phases



Further, in thinking about the funding and financing of HCPs, it is helpful to consider the various distinct phases of HCP development and implementation. The costs of each of the different phases of the HCP process should be considered individually, as the legal authority and sources of funding and financing may vary, as follows:

- Early broad-scale research, surveys and mapping (and potentially planning) at the regional, state and national levels: these costs are normally borne by government agencies and may be shared. As the surveys and mapping are more focused, or relate to a particular industry or group of projects, the costs may be allocated to or shared by the particular industry or projects to the extent they are benefited and the burden – the costs, are allocated to them as part of the HCP process. Until recently, this has largely been part of the HCP planning phase, but resource agencies and others have

been increasingly contributing to early research and mapping to provide ecosystem scale analyses. Further funding for research in this area would be helpful.⁴⁹

- Planning and preparing the HCP: The costs of biological research and analyses and the preparation of a HCP that is focused on a specific “Area of Concern” are generally shared among the private and public sources involved (local, state and federal; in some cases, federal ESA Section 6 funds are available). The sharing of costs is often provided for in a HCP Planning or Implementation Agreement or Memorandum of Understanding that is developed at the outset of the formal HCP process.⁵⁰
- Historically, the sources available for this purpose have included State or federal planning grants supplemented by local government general funds (or in-kind work). In some cases, planning funds have been supplemented by project proponents, such as transportation or energy infrastructure agencies, or private organizations.
- Acquisition of habitat: The costs associated with the acquisition of wildlife habitat are often the most significant in the implementation of the HCP and are paid from public local, State and federal funding sources and, significantly, project mitigation fees or compensatory mitigation.
- In some cases, e.g., County-levied sales tax revenues have been used to mitigate impacts from transportation projects.⁵¹ In other cases, funding has been provided by impact fees on development projects. Since these fees relate to development, the habitat conserved tends to be near the development and the cost of the habitat is inflated due to the inflationary pressure induced by development in the area. In contrast, if there were early up-front funding from local, State and federal sources, habitat could be acquired prior to the escalation in its price due to development pressure. Money expended to purchase habitat in advance could be re-paid, at least in part, from development impact (“in-lieu”) fees. As discussed below, the question is how to structure such advanced acquisition programs. For example, from the federal perspective, if the federal funds provided are

Below: Delta Smelt
Photo source: Bay Delta Conservation Plan



Federal budgets for conservation must evolve beyond a project-by-project to a programmatic focus.

As the extent and magnitude of HCPs have grown, advance project-related funding for HCPs has lessened, increasing the need for early programmatic funding, with provision for later individual project participation and payback.

intended to be part of a revolving fund, legislation would be required to provide that the re-payments would be retained in the fund.

- Management: Restoration, Maintenance and Monitoring: The costs related to management: restoration, maintenance and monitoring are often viewed as perpetual and, typically, funded from on-going public sector funding or by the developer as an endowment concurrent with the acquisition of habitat. In some cases, the mitigation may be required only for the term of the impact (including any time required for restoration). These needs have been an increasing focus of HCP funding discussion, especially in light of the need for flexibility due to environmental change, unforeseen circumstances and conservation science development.
- Climate Change: While normally not considered as a part of the funding provided for in the HCP, increasingly, there is a concern that the management of the habitat acquired under HCP will be required to adapt based on a change in climate. As mentioned above, this change may include a shift from plans that focus on a fixed geographic area and ecosystem to a strategic focus that addresses changing circumstances, with less predictable costs and outcomes.

Sources of Funding

Currently, similar to the path described in the story of the Northern California levees, funding for HCPs is relatively ad-hoc. Each HCP planning group has worked to cobble together the necessary funding for the implementation of its plan.

At the federal level, portions of the Land and Water Conservation funds (from oil and gas production from the Outer Continental Shelf lands) are made available, along with funds from the USFWS budget (through the Cooperative Endangered Species Conservation Fund, Section 6 of the Endangered Species Act). However, only a fraction of these revenues have been made available for HCPs and the aggregate amounts available have not increased over the years. Accordingly, as HCPs have proliferated and expanded in scope, the funding amounts available remain much the same and are more thinly spread (see “*Why Fund Allocation Needs to Increase*” on page 40).

And, while FHWA policy and most state transportation programs acknowledge the benefits of large-scale advance mitigation for impacts of infrastructure projects, funding practices often frustrate efforts to reach this objective. Because federal grants and capital budgets are generally made on a project-specific basis, and states plan accordingly, there can be no accommodation within project budgets for acquisition of habitat that may be unrelated to present needs. FHWA and, by implication, the States, should be encouraged to meet mitigation requirements through reliance on large-scale mitigation banks or credit pools, or other means of providing advance mitigation.

Further, the Administration has not expressed support for pending legislation to authorize federal loans and loan guarantees for the purpose of acquiring HCP habitat, known as the Infrastructure Facilitation and Habitat Conservation Act. Nonetheless, the concept has been incorporated into the new Water Infrastructure Finance Innovation Act (WIFIA), to be administered jointly by EPA and the USACE, and is a pending amendment of the existing Transportation Infrastructure Finance Innovation Act (TIFIA) program. CEQ and others could be encouraged to announce support for the pending legislation, the TIFIA amendment, and timely implementation of WIFIA.

Further, other funding sources could be made available. For example, in Colorado, transferrable income tax credits are available for the donation of conservation easements to qualifying holders.⁵²

To the extent that State funding is available, it tends to be uncoordinated and what little funding is available tends to be provided separately through its infrastructure programs focused on transportation, energy, water and air quality (and climate change). Again, broader funding pools would make sense. For example, in Florida there are provisions for collaboration in the conservation of water resources (including wetlands). This concept could be applied to uplands and a variety of public agencies.

In California, counties have stepped up to fund transportation (and are now the primary funders of highway maintenance) and, increasingly, habitat conservation.⁵³

Similar to the lessons from the Northern California levies, individual project proponents have funded individual HCP efforts; however, as the magnitude of the efforts and their regulatory complexities and demands (e.g., for increased detailed research and information) have grown, the willingness of project proponents to provide advance funding for HCPs has diminished. At the same time, while these interests recognize the value of the effort, as with the levy proponents, they cannot or will not individually bear the up-front burdens. They are willing, however, to bear the allocated burden to the extent of the mitigation required with respect to their projects as the projects are realized.

Accordingly, in thinking about the funding of the individual phases of a HCP, as described above, we suggest the following:

- ***Early research, surveys and mapping*** are critical and need to be a shared State and federal undertaking, likely at a State level with the idea of establishing State level guidance and identifying, as suggested above, opportunities and “areas of critical concern” or areas where focused plans and efforts would be helpful in reconciling conservation concerns with possible future infrastructure development or other human activities. This work could be coordinated with the efforts of the State Wildlife Action Plans and the Landscape Conservation Cooperatives (and coordinated with other public agencies and interests, as appropriate) and is consistent with the California Regional Sustainability Initiative of the California Strategic Growth Council, as well as the thrust of the South Florida Ecosystem Restoration effort, etc. providing a State-level framework for further habitat conservation efforts.
- ***Early Advance Mitigation and Conservation efforts*** in concert with anticipated infrastructure and development could be funded and financed from State and federal sources (either as grants, loans or loan guarantees) under financing arrangements such as those discussed below, contemplating repayment, related to mitigation burdens, from tax revenues, project mitigation and impact fees (including ILFs) and credit purchases. Although FHWA policy and most State transportation programs acknowledge the benefits of large-scale advance mitigation for impacts of infrastructure projects, funding practices often contravene this objective. Because federal grants and capital budgets are generally made on a project-specific basis, and States plan accordingly, there can be no accommodation within project budgets for acquisition of habitat that may be unrelated to present needs. FHWA and, by implication, the States, should be encouraged to meet

There is a need to develop stable long-term public and private landscape stewardship institutions (with provision for landscape-level monitoring, management and adaptation).

mitigation requirements through reliance on large-scale mitigation banks or credit pools, or other advance mitigation approaches.

- ***Conservation management*** could be shared among project proponents and the public(s) as established by law, or agreed upon, with the management undertaken by public agencies, non-profit conservation organizations or, perhaps, the project operators.
- ***Subsequent changes*** related to climate change and other circumstances (e.g., unforeseen or not under the control of the project operators) need to be considered further. Some have suggested that the burden should be in part, or whole, a cost of the project. Consideration of this suggestion raises foundational questions regarding the function of public institutions as “safety nets” or as providing the means for the public sharing of certain risks related to future uncertainty.

Financing Arrangements: Impact Fees and Mitigation Credits; Mitigation Banks and Credit Pools

While “funding” looks to the sources of money and in-kind mitigation and conservation, “financing” is concerned with the provision of current funding and commitments, expectations and arrangements for future funding and the terms of such arrangements. The following briefly discusses the use of local taxes (real property and sales), Infrastructure Banks, Mitigation Banks and Credit Pools, all of which could be the subject of an HCP or HCP-like arrangement.

Mitigation and Impact and In-lieu Fees (“ILFs”).

In addition to provisions for on-site mitigation (the lessening or offsetting of anticipated project impacts or effects), development fees and charges (e.g., ILFs under the CWA)⁵⁴ may be required as “compensatory mitigation”, including the acquisition and management of lands to mitigate the effects or impacts of a particular project or action. These fees and charges then may be made available for mitigation lands or management acquired by a public agency or conservancy or may be used to repay loans used for this purpose, including the repayment of funds provided for the acquisition of landscape-level habitat as “advance mitigation”.

A significant challenge is the comparative valuation of impacts and compensatory mitigation. As indicated, this is especially difficult when working to integrate compensatory mitigation under CWA and ESA, as well as State and local regulations. This topic needs significant further attention.

It is important to note that if land were to be acquired in advance for conservation with public funds, sufficient to fully offset the threat to a species, it could be argued that the habitat has been acquired and conserved and that there would be no basis for requiring, in arrears, further mitigation. Accordingly, the arrangements for compensatory mitigation fees should be put in place at the time of the initial acquisition and dedication of the habitat to conservation, carefully anticipating that the conservation attained will be the basis of mitigation credits or costs to be available or assessed to future projects or activities as compensatory mitigation.



Commitments of Infrastructure Funding Streams.

Transportation has led in an effort to acquire and conserve habitat in advance, utilizing County sales tax revenues, of landscape-level conservation, and utilizing the related “mitigation credit” for the later mitigation of transportation projects. In thinking more broadly about the allocation of the burdens of conservation, it may be determined that a particular portion (percentage of the costs) should be allocated to and borne by development (perhaps both past and future) within a region. A portion of the costs then could be allocated to the region through property-related taxes or transportation or other charges (e.g., energy, water, etc. or perhaps a “sustainability” charge). The underlying intent would be to fairly distribute the regional burden.

Real Property and Tax Revenues and Bonds.

State real property and real estate transfer taxes (together with the proceeds from bond financing based on such anticipated proceeds) have been used in California, Florida and Texas to acquire and conserve wildlife habitat.

Starting in 1972, Florida created one of the nation’s most extensive public acquisition programs for the conservation of habitat conservation, funded by an excise tax on mineral extraction and documentary stamp tax on real estate transfers and utilizing bonds to provide immediate funding. These programs were recently curtailed, but were reactivated, in part, by a 2014 State Constitutional amendment that passed with a 75% affirmative vote of the electorate.⁵⁵

Infrastructure Banks.

Recently, California authorized the establishment of Enhanced Infrastructure Financing Districts, allowing the adoption of an infrastructure financing plan, tax increment revenues, and the issuance of bonds that could be utilized for this purpose.⁵⁶

Mitigation/Conservation Banks and Credit Pools.

The idea of mitigation or conservation banks developed in the 1980s in response to the national regulation of the dredging and filling of waters of the United States and the taking of endangered species. The idea was that wetlands or the habitat of endangered species would be privately-owned and cared for in perpetuity as a Mitigation

Above: Sunrise over Steens Mountain, Greater Sage Grouse Lek

The effect of rangeland fire and invasive plants on sagebrush habitat continue to threaten the survival of the Sage Grouse.

Photo source: the Bureau of Land Management Oregon and Washington.

or Conservation “Bank” and, in turn, the owner of the Bank would sell mitigation credits ” from the Bank as mitigation for the dredging and filling of, or impacts to, other wetlands and the take of endangered species. The concept evolved to include endowments for the perpetual care of the lands conserved and arrangements to keep track of the interests sold. In some states, Banks (including the endowments provided) are regulated.

A similar approach is currently being explored in California that involves the establishment of “pools” of “mitigation credits” based upon the mitigation value of the relinquishment of BLM grazing allotments, with the mitigation credits being tracked by the related county and certain assurances provided to the State regarding the federal lands to be conserved. The distinction between a “Bank” and a “Pool” is that a “Bank” includes provision for both tracking mitigation credits AND the care of the lands underlying the “mitigation” being provided. A “Pool” only tracks the mitigation credits. The “Pool” could be used when the lands are held or owned by a public agency, such as BLM or a State agency.

A key issue with respect to mitigation banks or pools is the establishment of the monetary and conservation value of a mitigation credit and the rules for its use as “currency” (its value in compensating and offsetting certain impacts, defined in terms of the character and magnitude of the conservation benefit). Historically, from the outset of the concept of mitigation (in the late 1960s), mitigation developed as a way to avoid, lessen or offset specific impacts or effects of an action or project on wildlife and wetlands. Initially, this was done project-by-project, requiring extensive and often detailed and intricate measurement of impacts/effects and proposed off-setting mitigation essentially involving a system of project-by-project “bartering”. In contrast, the establishment of a mitigation bank or pool provides the basis for a broader system of mitigation, including credits based on more generic habitat values.

Examples of the utilization of “generic” habitat measures include: the use of Coastal Sage Scrub (“CSS”) in a Section 4(d) rule as a surrogate in permitting the take of Coastal California Gnatcatchers (five percent of the CSS was allowed to be taken/removed whether or not occupied by federally-listed gnatcatchers and the remainder was to be conserved); and, provision in the Western Riverside Multiple Species Plan that allowed the loss of habitat for “Covered Species”, including that of federal and State-listed species (but not including the habitat of “narrow endemic species” or riverine or riparian habitat under Section 404 or the California Streambed Alteration Agreements) provided that adequate progress (as defined by the Plan general as being in “rough step”) was being made in conserving 530,000 acres of habitat within the 1.2 million acres comprising Western Riverside County under the Western Riverside MSHCP.

In connection with the early eco-system surveys and research discussed above, it may be possible, in a similar manner, to establish such generic habitat values in relationship to mitigation credits, thereby avoiding the project-by-project pairing of impacts and proposed mitigation.

It would be helpful if the elements (e.g., templates) and practices of such conservation banks and pools could be established under State and federal regulations.

The mitigation banks and pools are important in the context of an HCP in that they provide a more efficient way to acquire landscape-level mitigation and then allocate the costs utilizing the sale of individual credits. This is effective large-scale conservation, while reducing the need for the evaluation of mitigation project-by-project and the cost of mitigation (due to early acquisition of mitigation).

Management, Monitoring and Enforcement

Chapter Four:

The effectiveness and continued use of the HCP concept depends on its enforcement.

A longstanding problem with HCP implementation is inadequate transparency and compliance monitoring. Most HCPs and associated monitoring reports are not posted online. Without easy access to these documents, the public cannot readily understand the conservation requirements that permittees must follow or verify compliance with the requirements.

Several studies have shown that USFWS struggles with resources to monitor whether permittees are complying with their conservation commitments. In a 2009 independent evaluation of the HCP program that FWS commissioned, the authors found that nearly 75% of FWS staff surveyed said that they had neither sufficient time nor resources to monitor compliance and implementation of the HCPs they supervised. Resulting issues included “performance data are not tracked and individual HCP data records often contain incomplete sets of data; data that are supposed to be collected often are not and thus many HCP records are incomplete.”⁵⁸ Except for the Olympia Field Office, the majority of USFWS field offices visited had “no standard operating procedures for validating compliance reports or conducting site visits.”

Other researchers have found similar problems at the root of the HCP program, including violations of monitoring requirements and neglect of adaptive management;⁵⁹ inadequate use of science;⁶⁰ absence of criteria to determine HCP effectiveness;⁶¹ and improper recording of land use restrictions from HCP conservation easements.⁶² These problems raise serious questions about the extent to which many HCPs are benefitting covered species, particularly because many HCP mitigation measures are proposed with little to no prior evidence of their effectiveness at offsetting adverse impacts. These problems also question the ability of HCPs to manage for change and uncertainty, particularly in light of climate change. Although there are good examples of HCP monitoring, the absence of attention, resources, and incentives to engage in and disseminate basic monitoring information, let alone adaptive management, is a chronic problem that undermines the legitimacy of the HCP program.⁶³

As part of the CEQ Conversation, the suggestion was put forward that at the commencement of each HCP process, a transparent system of record-keeping, monitoring, management and enforcement should be instituted with respect to the HCP and made generally available on-line to the public through-out and following its term.

Implementation
Agreements are only as effective in reconciling various interests and concerns as their enforceability.

Chapter Five:

Conclusion and Next Steps

USFWS has proposed revisions to its Mitigation Policy⁶⁴ and is expected to publish in the near future a revised version of its HCP Handbook. However, it is anticipated that both of these efforts will continue to focus on regulation. What is needed is a broader vision.

The sense of our Dialogue is that DOI and others at the federal, State and local levels should focus increasingly on a broad programmatic, landscape-level approach to habitat planning and conservation in coordination with anticipated future infrastructure and development. In such a programmatic approach, the concepts underlying HCPs make sense; that is, collaborative innovation, focused on geographic-based plans, implemented through multi-agency/interest agreements and addressing wildlife conservation in concert with anticipated infrastructure and development and in consideration of “sustainability” (including, for example, climate change).

Elements of this programmatic/landscape-level approach include:

1. Greater focus on cooperative State/federal early broad-scale (statewide) science and mapping, together with the establishment of information systems (for gathering, managing and the “transparent” sharing of information).
2. State-wide and regional scoping of the conservation of eco-systems in anticipation of infrastructure, development and other human activities and in consideration of sustainability, under the leadership of the respective state and in cooperation with the respective federal and local agencies and others.
3. Early landscape-level acquisition and conservation of wildlife habitat (including provision for advance mitigation, and utilizing, e.g., mitigation banks and credit pools and other arrangements for reimbursement programs).
4. Establishment of early funding and financing mechanisms for early science/ mapping, advance landscape-level acquisition for conservation and advance mitigation (with provision for repayment from, e.g., impact fees, in lieu-fees from future development and other sources).
5. Use of more “standard form” HCPs to address more focused areas of concern involving conflicting interests and future uses and activities.
6. Increased collaboration among the respective constituencies of affected local, state and federal agencies and interests (including the better alignment of governance policies and practices); and, increased efforts to better understand the elements of collaboration, including, e.g., principles and practices of dialogue, scoping and related leadership.

The focus at the private and public national, State and local levels should be on broad programmatic approaches based on: collaborative innovation, landscape-level plans, implemented through multi-agency/interest agreements, addressing wildlife conservation in concert with anticipated infrastructure and development ... and with a view to “sustainability” and “resilience”.

Continued Dialogue is critical in this time of dramatic change resulting from innovation in information technology and deep concerns relating to wildlife conservation, “sustainability” and “resilience”.

Next Steps:

- » Research case studies;
- » Further dialogue sessions on multiple agency coordination, funding, the practice of collaboration and, possibly, “sustainability” and “resilience”.
- » Exploration of “pilots” and “models”.

Suggested immediate next steps of the HCP Dialogue include:

1. Continue research regarding past Habitat Conservation Planning efforts, including, e.g., the five efforts described in Chapter 3 Case Studies:
 - San Francisco Bay-Delta Plan;
 - Chesapeake Bay Program;
 - Multiple State Greater Sage-Grouse Plans;
 - South Florida Eco-system Restoration Program; and,
 - California Desert Renewable Energy Program.
2. Convene (with the Environmental Law Institute as host and in collaboration with others) further small, narrowly focused dialogue sessions regarding:
 - multiple agency programmatic collaboration (regarding permitting, planning and other efforts);
 - funding and financing of the early science and surveying and landscape-level conservation efforts described above; and
 - an exploration of the principles and practices of successful collaboration.
3. Consideration of “pilot” or “model” collaborative HCPs, studies and programs.
4. Possible expansion of the Report into a book.
5. Establishment of a CCG web-site that includes this Draft Report, with the idea that further comments and ideas would be welcomed, vetted and incorporated into the evolving Report (in a Wikipedia-like process)—possibly undertaken as a collaborative effort with other organizations (such as the National Habitat Conservation Planning Association) under the over-sight of a very small review group (e.g., reflecting the spectrum of interests and views involved).

In closing, it appears from the HCP Dialogue, that we need to continue to progress from our focus on silo-like, project-focused, regulatory programs to programmatic planning and implementation efforts, focused on landscape-level conservation in anticipation of infrastructure and development and in consideration of “sustainability.” Such an approach calls for early research and mapping, advance landscape-level conservation and mitigation, cooperative funding, multi-agency coordination, collaborative planning among the affected constituency of agencies and interests and, greater integrated and coordinated permitting and transparent monitoring and enforcement.

The design and model of this Dialogue is the same – a loose collaboration of those within the affected agencies and interests focused on innovation with respect to the future of Habitat Conservation Planning. Comments by the readers would be welcomed.

Endnotes:

- 1 Reports by CLEANR on the dialogue sessions include: Alejandro E. Camacho, Elizabeth Taylor and Melissa Kelly, Lessons from Area Wide Multi Agency Habitat Conservation Plans in California, 46 ENVTL. L. REP. 10222 (2016); and, Alejandro E. Camacho, Elizabeth Taylor, Melissa Kelly, & Stephanie Talavera, Emerging Regulatory Experiments in Permit Process Coordination for Endangered Species and Aquatic Resources in California, 46 ENVTL. L. REP. 10131 (2016).
- 2 See the reference in Appendix A 1 to earlier reports regarding aspects of the Dialogue prepared by CLEANR including “lessons learned” and the financing of HCPs and California Natural Community Conservation Plans. This report is prepared by CCG and focuses primarily on the need for an increasingly programmatic, landscape level approach in the implementation of the HCP concept. The intent of this Report is to reflect the “sense” or synthesis of the input of the more than 100 participants in these sessions, interviews and small meetings. It does not reflect the views of every participant or group of participants. In some instances, the need for more focused studies of specific practices has been suggested, including, for example, enforcement, climate change, the geographic extent of HCPs and the time and expenses expended in their preparation, adoption and implementation. While these more focused topics have been considered in the preparation of this report and more detailed studies may well be helpful, it is clear that more “programmatic” and landscape level approaches to habitat conservation will significantly improve both our efforts to conserve wildlife habitat as well as our ability to efficiently plan and implement infrastructure and other development (and may inform, as well, approaches to sustainability). Perhaps more significantly, a programmatic approach provides a “vision,” conceptual framework, or understanding that can be embraced by the varied constituency of affected agencies and interests by all of us.
- 3 Kelly, Robert, *BATTLING THE INLAND SEA* (University of California Press, 1998)
- 4 This same emphasis is expressed in the recent Presidential Memorandum, “Mitigating Impacts on Natural Resources from Development and Encouraging Related Private Investment” (November 3, 2015): the emphasis on innovative, early, programmatic approaches, beyond project by project ad hoc regulation, to address the conservation of wildlife habitat “simultaneously” with planning for economic development.
- 5 H.R. REP. No. 97 835 (September 17, 1982) (“Conf. Report”), reprinted in 1982 U.S.C.C.A.N. 2960.
- 6 See sidebar images on Page 1. The South Florida Ecosystem Restoration Project was established, and funded in part, by the Water Resource Development Act of 1996, under the direction of a state, federal and tribal Task Force to direct its implementation. Significantly, Senator Graham and, former Governor of Florida, led the effort to adopt the enabling legislation. The model for this collaborative effort was an earlier HCP effort focused on North Key Largo, Florida, which was established by the Governor’s Executive Order when he was Governor of Florida (resulting in the conservation of virtually all of the undeveloped portion of the twelve mile long key) and reflected, as well, other state federal regional efforts (see the references to the Delaware River Basin and Chesapeake Bay Programs above). Prior to the 1996 WRDA legislation, the effort leading up to that federal legislation was undertaken by a Florida Governor’s Commission in tandem with a separate federal task force under the direction of George Frampton, then Assistant Secretary of the Interior for Fish, Wildlife and Parks. This institutional structure was thought to be advisable in order to comply with the Federal Advisory Committee Act and was addressed in the federal legislation by the establishment of the State/Federal Task Force.
- 7 This broader landscape level, programmatic focus is reflected in: Lynn Scarlett et al., *LARGE LANDSCAPE CONSERVATION: A Strategic Framework for Policy and Action* (Lincoln Institute of Land Policy, 2010); David Hayes, *THINKING BIG, Testimony* (The Environmental Forum, Environmental Law Institute, November December, 2013); Secretary of Interior, Sally Jewel, Order No. 3330, *Improving the Mitigation Policies and Practices of the Department of Interior* (Dept. of the Interior, Oct. 31, 2013); JOEL E. CLEMENT, ET AL. *A STRATEGY FOR IMPROVING THE MITIGATION POLICIES AND PRACTICES OF THE DEPARTMENT OF INTERIOR; A REPORT TO THE SECRETARY OF INTERIOR FROM THE ENERGY AND CLIMATE CHANGE TASK FORCE* (April, 2014); Presidential Memorandum: Mitigating Impacts on Natural Resources from Development and Encouraging Related Investment (November 3, 2015); and USFWS Notice, *Proposed Revisions to the U. S. Fish and Wildlife Service Mitigation Policy* (Vol. 81, No. 45, Fed. Reg. March 8, 2016. See also, the Western Governors’ Species Conservation and ESA Initiative. “Among other things, the initiative will create a mechanism for states to share best practices in species management; promote and elevate the role of states in species conservation efforts; and explore ways to improve the efficacy of the Endangered Species Act.”; and, WGA Policy Resolution 2016 08 regarding Species Conservation and the Endangered Species Act. <http://www.westgov.org/initiatives/esa/initiative>; <http://www.westgov.org/images/2016 08 Species Conservation and ESA.pdf>
- 8 See generally, Public Land Law Review Commission, *HISTORY OF PUBLIC LAND LAW DEVELOPMENT* (1968).
- 9 Scarlett, Lynn, et al., *Large Landscape Conservation: A Strategic Framework for Policy and Action* (Policy Focus Report, Lincoln Institute of Land Policy, 2010) (see endnote 7, *supra*).

10 "The Bureau of Land Management (BLM) and the U.S. Forest Service (USFS) have finalized land use plans that will conserve key sagebrush habitat, address identified threats to the greater sage grouse and promote sustainable economic development in the West. The plans were a critical component that assisted the U.S. Fish and Wildlife Service (USFWS) to conclude that the rangeland bird no longer warrants protection under the Endangered Species Act (ESA)." <http://www.blm.gov/wo/st/en/prog/more/sagegrouse.html>, 1/30/2016). See graphic, Figure 3.6.

11 See, e.g., Dixon, L., et al., *Balancing Environment and Development Costs, Revenues, and Benefits of the Western Riverside County Multiple Species Habitat Conservation Plan* (The Rand Corporation, 2008). ("Rand Study"); and, *Economic & Planning Systems, Inc., Economic Effects of Regional Habitat Conservation Plans*, prepared for the California Habitat Conservation Planning Coalition, 2014; and, [papers by Wachs and Lieberman]. Wachs, M. and Lederman, J., *Transportation and Habitat Conserve Plans, Improving Planning and Project Delivery While Preserving Endangered Species* (2014).

12 Comments by Dr. W. Spencer, Conservation Biology Institute, in letter to T. Adams, National Habitat Conservation Planning Coordinator, USFWS, dated September 4, 2015.

13 <https://www.environment.fhwa.dot.gov/ecological/ImplementingEcoLogicalApproach/default.asp> (last time visited, June 11, 2016).

14 E.g., State Wildlife Action Plans are required by federal law in order for a state to receive funds through the Wildlife Conservation and Restoration Program. (http://teaming.com/state_wildlife_action_plans_swaps). Landscape Conservation Cooperatives ("LCCs") were established by an order of the Secretary of the Interior in 2010. The 22 LCCs (See the graphic attached as Figure 3.1) collectively form a national network of land, water, wildlife, and cultural resource managers, scientists, and interested public and private organizations within the United States and across international borders that share a common need for scientific information and interest in conservation. As collaboratives, LCCs seek to identify best practices, connect efforts, identify gaps, and avoid duplication through improved conservation planning and design. Partner agencies and organizations coordinate with each other while working within their existing authorities and jurisdictions. <http://www.doi.gov/lcc/index.cfm>. In addition, NGOs such as The Nature Conservancy and The Conservation Fund, operate nationally to address conservation concerns.

15 See, Pelham, Thomas G., *Regulating Areas of Critical State Concern: Florida and the Model Code*, *Urban Law Annual; Journal of Urban and Contemporary Law*, Volume 18 (January, 1980). The "special area" concept is reflected in the provision for Special Area Management Plans in the CZMA and has been applied by USACE in upland areas (E.g., USACE, *Guidance Letter O5 09*, 2005). This idea of tiering is flexible and may be applied to research and surveying of eco systems, with the idea of identifying areas where further more detailed planning is called for, or it may take a further step and provide that more state regulation or oversight may be or is required with respect to the identified areas. By contrast, in some cases, the tiered planning approach has been preempted from the outset by special management areas which have been established by State legislation and accompanied by special regulations and management. For example, San Francisco Bay, the California Coastal Zone, the New Jersey Pinelands, Lake Tahoe, the Delaware River Basin and Chesapeake Bay.

16 See, the Gateway Basin, Appendix D.

17 Recent efforts, and ideas going forward, within the Department of Interior and more broadly and set forth in footnote 13, *supra*. Earlier efforts were pursued by California, with respect to the water system in the 1960's and 1970's, and then the development of information systems regarding its eco systems generally with the "CERES program" in the 1990's (CERES was significantly cut back a decade later during an economic downturn); and, by Florida during the 1970's through the decade following the turn of the Century, focused on the land/water eco system of South Florida. The federal government focused on its federal lands in the late 1960's with Report of the federal Public Land Law Review Commission in 1969 and proposals (for example by Senator Jackson and Robert Ehrlichman, Domestic Advisor on President Nixon's staff) for a new National Land Use Policy and Act toward the end of President Nixon's term, which ended with his resignation (for a discussion of ideas underlying those proposals, see the Mandelker article cited in Appendix C). Currently, the California and federal focus has expanded once again with the increasing concern regarding Climate Change and Sustainability (with the establishment nation wide of the federal DOI Landscape Conservation Cooperatives program). And, of course, there was the environmental revolution of the late 1960's and early 1970's, during which major federal and state legislation was enacted. This time evokes a similar possibility of change.

18 Historically, there has been a sense within the environmental and development communities of "institutional anger", one against the other, with regulatory processes providing the battleground. This stand off may be changing and moving increasingly toward collaboration, whereby there is an appreciation of the value of nature as well as the need for development to accommodate our growing population. In 1994, the regional, State and federal transportation agencies undertook a collaborative planning process, essentially like that used with respect to the San Bruno Mountain HCP, pursuant to 4(f) of the National Transportation Act and Section 106 of the National Historic Preservation Act, to address

concerns regarding impacts to the residence and workshop of Sam Maloof, at the time, the foremost woodworker in the Nation. A plan for its conservation was arrived at after three years and the historic structures were relocated and conserved at significant cost (in excess of \$20 million). At the time, some were of the view that Maloof was greedy and that it had cost transportation efforts "dearly". In turn, Maloof, felt a deep anger toward the transportation agencies for disrupting his property and life. Now, 20 years later, there is a common feeling that the six plus acre site with its draught resistant garden, art gallery, historic structures and wood working business (which has carried on Maloof's legacy, producing unique, quality, crafted furniture), is a special, prized, element of the regional community. A similar kind of rivalry has existed in the funding of transportation and eco system efforts with the sense that providing for funding of wildlife habitat through state and federal transportation related legislation takes away from the building of transportation facilities the sense that there is not enough porridge to go around. On the other hand, the passage a San Diego County measure in 2008 [check] to increase local sales taxes to support transportation projects was aided by the inclusion of funding for environmentally related projects evidencing growing collaboration between the two camps.

19 See, as background, Collaboration in NEPA, A Handbook for Practitioners (CEQ, 2007), describing various applications of this idea and sources. Interestingly, in keeping with the times, it appeared to be based on ideas regarding coordination and conflict resolution rather than the concepts underlying collaboration.

20 See, <http://www.sustainablecommunities.gov>.

21 **Comment:** D. Olson, USACE: "An important challenge is how to use that information in an effective manner. Additional tools or approaches are needed to take the vast amount of available information to help do better planning and decision making. There is also a need to critically evaluate the quality of that data, because some of it might be many years old. Much change in the landscape might have occurred after the data were compiled so that those data no longer accurately reflect the current landscape."

22"Interestingly, Section 101(a) of NEPA states: "The Congress, recognizing the profound impact of man's activity on the interrelations of all components of the natural environment, particularly the profound influences of population growth, high density urbanization, industrial expansion, resource exploitation, and new and expanding technological advances and recognizing further the critical importance of restoring and maintaining environmental quality ... it is the continuing policy of the Federal Government, in cooperation with State and local governments, and other concerned public and private organizations, to use all practicable means and measures, including financial and technical assistance, in a manner calculated... to create and maintain conditions under which man and nature can exist in productive harmony...."

23 E.g., the DRECP covers more than 22 million acres in the California Desert with a broad variety of agencies and interests involved. The Bay Delta Conservation Plan involved not only the eco system, but an interest in providing water for the estuary and its wildlife, as well for the San Joaquin Valley the Nation's bread basket, and for a water hungry population in the desert of Southern California. After receiving more than 10,000 comments on a draft EIR for the DRECP, the lead agencies chose to restructure the process and proceed first with a BLM led process for the adoption of a LUPA under FLPMA, covering approximately 16 million acres of DRECP lands. Understandably, this would address land uses within the federal lands administered by BLM and could later be expanded to cover the remainder of the 22.5 million acres envisioned.

24 One reviewer of this paragraph, noted that in researching the HCP processes, they appeared to involve a great deal of hostility and that it was naïve to suggest such collaboration as a standard practice. However, it is clear that the San Bruno Mountain HCP, and others, were characterized by such collaboration and underlying "dialogue". The suggestion is that our practice in this regard is evolving and that collaboration and dialogue should be promoted.

25 **Comment:** D. Olson, USACE: "There are different types of boundaries that need to be considered, such as political boundaries (e.g., states, counties, municipalities), agency boundaries (e.g., resource and activity jurisdiction; regulatory and non regulatory), and ecology based boundaries (e.g., watersheds, eco regions). There may be other types of boundaries that warrant consideration. To promote collaborative efforts among agencies and stakeholders there probably needs to be guidance, agreements, or other types of written documents that give agency staff "permission" or direction to do these more systematic, holistic, collaborative approaches."

26 **Comment:** D. Olson, USACE: "Landscape scale plans aren't going to work if they aren't embraced by the entities that will implement them and the landowners that are affected by the plan. Many larger scale plans end up on a bookshelf or in a file cabinet and aren't used because of lack of commitment or lack of resources to fully implement the plan. If all the relevant participants are involved from the outset, with agreed upon goals and objectives, then there is greater likelihood of implementing the plan. Trade offs and compromises will be needed to develop a plan that has broad acceptability and buy in from participants."

27 **Comment:** D. Olson, USACE: "Agency leadership needs to provide direction to staff on how to do these newer approaches. The collaboration among agencies can begin when the leaders of the participating agencies, along with other stakeholders, work together to develop an overall approach that will guide staff that do the day to day work that accomplishes the objectives of the collaborative management approach to protecting natural resources and moving forward with development and infrastructure."

Three examples of "scoping" that have been employed in collaboration include: the HCP processes addressing wildlife habitat conservation and development on San Bruno Mountain, North Key Largo (the first key off the Florida mainland) and, efforts to address the conservation of the historic home and workshop of Sam Maloof threatened by the development of the 210 Freeway in Southern California. The scoping process regarding San Bruno Mountain was led by San Mateo County and involved the State and federal wildlife agencies, three cities, the landowner, developers and environmental groups. The North Key Largo process was a somewhat formal process convened pursuant to then Governor Bob Graham's Gubernatorial Executive Order and overseen by his Secretary for Community Affairs, while the Maloof process was very informal a series of meetings among the Maloofs, the City of Rancho Cucamonga and the regional, state and federal agencies convened in the historic residence (with Alfreda Maloof serving lemonade and cookies). At the heart of these "scoping" processes was a structured dialogue, regarding concerns, issues, opportunities and alternatives, together with related considerations. In each case, supporting these effort, there was a foundation of growing empathy and mutual "respect" on the part of those involved.

28 See also the report on Large Landscape Conservation, endnote 7, *supra*, and the website cited (www.lincolninst.edu/subcenters/regional-collaboration) for its discussion of regional collaboration and referenced case studies.

29 See www.spk.usace.army.mil: "CWA 404 Permit Strategy Aligned with South Sacramento Habitat Conservation Plan" (USACE, Sacramento District, December 2015).

30 With respect to the broader context of efforts within DOI, see: Clement, J., et al., A Strategy for Improving the Mitigation Policies and Practices of the Department of Interior, A Report to the Secretary of the Interior from the Energy and Climate Change Task Force (April 2014). ("DOI Mitigation Strategy Reprt").

31 See, USACE Regulatory Guidance Letter 05 09, available at: http://www.usace.army.mil/Portals/2/docs/civilworks/RGLS/rgl05_09.pdf.

32 CLEANR, Roundtable Reflections on the Natural Community Conservation Planning Experience in Southern California (July 15, 2015).

33 The coordination of varied federal and state efforts regarding habitat conservation is important and often complicated. For example, HCPs may provide for wildlife conservation (species, biological communities, eco systems, etc.) beyond required mitigation to provide for species that are or may be listed under the ESA. In Pima County, Arizona, the Sonoran Desert Conservation Plan is a voluntary plan that provided the basis upon which to build the Pima County HCP. In California, the Natural Communities Conservation Planning (NCCP) Act provides for additional, beyond mitigation, conservation and has a "species recovery standard". In some cases, HCP applicants may provide additional, voluntary conservation and include it as a separate document or as an HCP appendix (e.g., the South Sacramento HCP, California). The latter approach may even go beyond the NCCP requirements (e.g. the Yolo County California Local Conservation Plan is a far reaching voluntary addition to the HCP/NCCP for the area.). These approaches extend beyond traditional HCP permitting with much more extensive, landscape scale, conservation. The resulting complexity deserves attention.

34 <http://www.chesapeakebay.net>; See also, Presidential Executive Order establishing a Federal Leaders Committee (<https://www.whitehouse.gov/the-press-office/executive-order-chesapeake-bay-protection-and-restoration>) to oversee the development and coordination of programs and activities and to prepare a Strategy for restoring and protecting Chesapeake Bay, in collaboration with the affected states. See, also: Paeffgen, Matthew, A Ringmaster for the Circus: Using Interstate Compacts to Create a Comprehensive Program to Restore the Chesapeake Bay (37 ELR 10888, 2007 (<http://eir.info/sites/default/files/articles/37.10888.pdf>).

35 See, <http://calwater.ca.gov>; <http://wwwcalfed>; <http://deltacouncil.ca.gov>; and, <http://www.californiawaterfix.com>.

36 Water Resources Development Act of 1996, Public Law 104-303 (October 12, 1996). <http://www.evergladesrestoration.gov/content/tf.html>.

37 <http://www.evergladesrestoration.gov>. See, Appendix C.

38 <http://www.blm.gov/wo/st/en/prog/more/sagegrouse.html>

39 <http://www.chesapeakeconservancy.org>

40 A CWA Regional General Permit was issued by USACE to the East Contra Costa County HCP/NCCP on May 4, 2012 with a 5 year permit term. The suggestion has been made that the CWA permit might be structured to be an “ever green” permit that would automatically be extended at the end of each year for a further year (unless otherwise directed by the USACE prior to the extension).

41 For example, the Sacramento District of the ACOE recently issued its memorandum dated December, 2015, entitled “CWA 404 Permit Strategy Aligned with the South Sacramento Conservation Habitat Plan” suggesting a “streamlined” approach that would align the regional HCP framework and compliance with CWA 401 and 404 (including the 404(b)(1) Guidelines), NEPA and Section 106 of the National Historic Preservation Act, utilizing the HCP as well as a regional general permit, Letters of Permission, and an abbreviated process for issuance of standard permits (if required). In the past, the EPA has been reticent to approve impacts to waters of the United States proposed in regional plans based on general proposed uses and has required specific project by project consideration of whether there were other upland sites that could accommodate the specific use (and thereby “avoid impacts to waters of the United States”). [check with EPA on status of this principle]. See Mara J. Hershman, et al., The Search for Predictability, Technical Report, Washington Sea Grant, Univ. of Washington HG 30 (October, 1980).

42 “PECE”: Policy for the Evaluation of Conservation Efforts. https://www.fws.gov/endangered/esa_library/pdf/PECE_final.pdf. [Texas]

43 Lederman, Wachs, J., Schlotterbeck, M., Sciara, G., Task 4 Report: Funding and Financial Mechanisms to Support Advance Mitigation (Institute of Transportation Studies, UC Davis, January, 2015).

44 https://en.wikipedia.org/wiki/National_Urban_Policy_and_New_Community_Development_Act_of_1970.

45 **Comment:** J. Hopkins, California HCP Coalition. “There may be situations where using federal lands for mitigation of private lands impacts is appropriate. But they need to be special circumstances where the federal lands that are protected both have very important biological resources and are not properly protected already.”

46 With respect to BLM lands, where, e.g., the relinquishment of a grazing allotment could provide compensatory mitigation, the underlying BLM lands may not.

47 E.g., the DRECP and the Greater Sage Grouse effort have both required massive efforts to map and catalogue potential habitat and preferred development sites. Generally this is done using remote sensing technology followed by on the ground surveys; however, some point out that often landowners will not permit such surveys. **Comment, Wayne Spencer**, Conservation Biology Institute: “Mapping of conservation values (e.g., by DRECP) increasingly use sophisticated computer modeling algorithms, not just remote sensing and field truthing. In fact the field truthing is usually woefully underfunded, so we need to rely on modeled coverages with sometimes unknown uncertainties”.

48 **Comment:** D. Olson, USACE: Most of the land (roughly 75%) in the conterminous United States is privately owned. There have been studies demonstrating that private landowners bear most of the burdens for wetland regulation, while the benefits apply to all citizens in the area. It is likely that this benefit/burden concern applies to wildlife habitat and other resources as well.

49 In California, there has been increasing interest (e.g., by the California Strategic Growth Council (“CSGC”), the California Biodiversity Council (“CBC”), The Nature Conservancy and others) in developing at the state wide and regional levels, approaches for the early mapping of eco systems, conservation needs, threats and opportunities (“Green Prints”; see, e.g., J. Thorne, et al., The Nature Conservancy/U.C.Davis, Greenprinting in California, Presentation, 2013) and, advance mitigation funding in connection with future state infrastructure (e.g., for water and energy) Regional Advance Mitigation Planning (“RAMP”; see, <https://rampcalifornia.water.ca.gov>); These efforts of CSGC and CBC could well explore the state level tiering of planning and regulation, providing a kind of conservation “framework”, perhaps such as that reflected in Florida’s establishment of “Areas of Critical State Concern” and concepts such as “Developments of Regional Impacts”. The role of the HCP concepts of multiple agency/interest collaboration and agreements might well be utilized at various levels of this work, e.g.: information gathering, sharing and management; collaborative efforts and agreements focused on specific areas of greater complexity (“focal areas”) calling for more detailed and fine grained planning (taking the form of Area wide MSHCPs).

50 See, e.g., the California Desert Renewable Energy Memorandum of Agreement, <http://www.drecp.org/documents>.

51 E.g., the Environmental Mitigation Program (EMP) of the San Diego Association of Governments (“SANDAG”) is an exceptional, innovative, pioneering effort that provides funds through TransNet, a county wide sales tax program, to protect, preserve, and restore native habitats as offsets to disturbance caused by the construction of regional and local transportation projects. The \$850 million program began purchasing property in 2008 and has now acquired approximately 3,600 acres around the region at a cost of \$117.8 million. Some of the recent acquisitions

go above and beyond required environmental mitigation and are made possible through savings achieved by buying land early, at lower prices, and in larger parcels. <http://www.keepsandiegomoving.com> (last visited: September 7, 2015). See also, Greer, K., *Habitat Conservation Planning in San Diego County*, ENVIRONMENTAL PRACTICE (Sept. 2004).

52 See, e.g., C.R.S. 39 22 522.

53 San Diego, Riverside, and Orange Counties, California, transportation sales tax measures to provide funding for conservation.

54 **Comment**; D. Olson, USACE: "In lieu fee (ILF) programs could be a good way to finance larger scale land acquisition efforts, especially for small impacts. Each permitted impact could be required to pay into the in lieu fee program to compensate for small resource losses, and those fees could be pooled together to acquire larger contiguous tracts of land that have important habitat value for the species of concern. See 33 CFR 332.8 for the Corps' regulations governing in lieu fee programs to provide compensatory mitigation in the CWA section 404 permit program. In lieu fee programs might be a better fit for the approaches discussed than mitigation banks. But in lieu fee programs will need to be properly structured so that they accomplish their mitigation commitments." See, Comment, Hugh Crowell, *How Do We Integrate HCPs and ILFs Within Watershed Plans?* (ELI, National Wetlands Newsletter, Vol. 34, No. 2, 2012) discussing use of ILFs within Watershed Plans and HCPs: "Management of both Mitigation banks and HCPs increasingly relies on the restoration of degraded or historic aquatic resources; yet, there are no clear or consistently applied methods for determining the functional life and the attendant credit schemes to account for the ecological improvements to the natural environment".

55 See Appendix C.

56 Chapter 2.99 (commencing with Section 53398.50 to Part 1 of Division 1 of Title 5 of the California Government Code. (2014).

57 Transparency and the availability of information is also important in the development and adoption of an HCP. With our increased ability to gather, store and information, it would be helpful to create a public accessible GIS data storage and sharing site available to the affected agencies and interests, which would include information related to its creation and including, as well, the results of subsequent surveying, monitoring and reporting. EPA is currently in the process of developing such programs.

58 Management Systems International, *An Independent Evaluation of the U.S. Fish & Wildlife Service's Habitat Conservation Plan Program* (Sept. 2009).

59 Alejandro E. Camacho, *Can Regulation Evolve? Lessons from a Study in Maladaptive Management*, 55 UCLA L. REV. 293 (2007).

60 Peter Kareiva et al., Nat'l Ctr. For Ecological Analysis & Synthesis Working Group, *Using Science in Habitat Conservation Plans* 5 (1999).

61 Robert McClure & Lisa Stiffler, *Troubled Plans*, SEATTLE POST INTELLIGENCER, May 4, 2005, at A12.

62 Jessica Owley, *Keeping Track of Conservation*, 42 Ecology L.Q. (2015).

63 **Comment**: John Hopkins, National HCP Coalition: HCP implementation must be very transparent and the information accessible to all parties, including the general public. Approved HCPs should have oversight from advisory or other committees that include the various stakeholders. Every few years there should be a review of the HCP to determine if it is working this must be a transparent process that the public can see. If an HCP is not working well enough, then the various parties must work out what to do, agreed upon assurances notwithstanding.

64 FWS HQ ES 2015 0126 (March 18, 2016). See also, Clement, J. et al., *A Strategy for Improving the Mitigation Policies and Practices of the Department of Interior, A Report to the Secretary of the Interior from the Energy and Climate Change Task Force* (April 2014).

Sessions, Meetings and Participants

Appendix A:

SESSION I: FEBRUARY 6-7, 2014, THE FUTURE OF HABITAT CONSERVATION PLANNING.

Host: CLEANR, UCI Law, Irvine

Moderators: Lindell Marsh, CCG, and Alejandro Camacho, CLEANR.

Participants:

Trish Adams, U.S. Fish and Wildlife Service; Michael Allen, U.C. Riverside; Lisa Belenky, Center for Biological Diversity; Therese Bradford, US Army Corps of Engineers; Greg Costello, Wildlands Network; Dan Cox, U.S. Fish and Wildlife Service; Joe Edmiston, Santa Monica Mountain Conservancy; Armand Gonzales, Ca. Dept. Fish & Wildlife; Keith Greer, SANDAG; Jordan Henk, Redlands Institute; John Hopkins, California HCP Coalition; Susan Hori, Manatt, Phelps & Phillips, LLP ; Randy Jackson, The Planning Center; Brenda Johnson, Ca. Dept. Fish & Wildlife; John Kopchik, East Contra Costa Habitat Conservancy; Charles Landry, Western Riverside Regional Conservation Authority; Jeff Opdycke, San Diego Zoo Global; Christy Plumer, The Nature Conservancy; Michael Robinson-Dorn, U.C. Irvine; Ed Sauls, The Sauls Company; Melanie Schlotterbeck, Conservation Clarity; Ken Schreiber, Santa Clara Valley Habitat Plan; Dan Silver, Endangered Habitats League; Sean Skaggs, Ebbin Moser + Skaggs, LLP; James Sulentich, Nature Reserve of Orange County; Greg Vail, Selva Partners; Martin Wachs, U.C.L.A.; Paul Weiland, Nossaman LLP; Jill Yung, Paul Hastings.

Report: CLEANR, Lessons from Area-wide Multi-Agency Habitat Conservation Plans in California.

SMALL GROUP MEETING: AUGUST 8, 2014, THE ROLE OF “PILOTS”.

Host: The Sam and Alfreda Maloof Foundation for Art and Craft, Rancho Cucamonga, Ca

Moderator: Lindell Marsh, CCG.

Participants:

Hasan Ikhrata, Executive Director and Ping Change, Southern California Association of Governments. Celeste Cantu, General Manager, Santa Ana Watershed Project Authority; Martin Wachs, PhD., Professor Emeritus and Jaimee Lederman, PhD Candidate, UCLA Lewis Center; Rick Bishop, Executive Director, Western Riverside Council of Governments; Ray Wolfe, Executive Director, San Bernardino Associated Governments; and, Tom Hudson, Director, Land Use Services, County of San Bernardino

Memorandum:

SESSION II: DECEMBER 11, 2014, FINANCE STRUCTURE OF HABITAT CONSERVATION PLANNING AND IMPLEMENTATION.

Host: Downey, Brand, Sacramento, California,

Moderators:

CCG: Lindell Marsh,

CLEANR, UCI Law: Alejandro E.Camacho, Director, Professor; Elizabeth Taylor, Atty.; Melissa Kelly, Atty.

UCLA: Martin Wachs, Professor Emeritus; Jaimee Lederman, Attorney and Ph.D. candidate

California Habitat Conservation Coalition: John Hopkins, Director

Participants:

Trish Adams, USFWS, National HCP Coordinator; David Alladjem, Downey, Brand; Dan Cox, USFW, California/Nevada HCP Coordinator; Manley Fuller, President., Florida Wildlife Federation, representing Florida Conservation Coalition; Alen Glen, Attorney, Sedwick, Texas; Denny Grossman, Senior Advisor, Calif. Strategic Growth Council; Brenda Johnson, HCP Chief, Calif. Dept. of Fish and Wildlife; Jennifer Garrison, Transportation Liaison, Cal. Dept. of Fish and Wildlife; Jennifer Johnson, Dudek Associates; Charlie Landry, Western Riverside Resource Conservation Authority; Monica Parisi, Calif. Dept. of Fish and Wildlife; Kristen Pawling, Southern Calif. Assoc. of Governments; Gian-Claudia Sciara, Professor, Transportation Planning, UC, Davis; Paul Weiland, Nossaman; Melissa Thorne, Downey, Brand; and, Douglas Wheeler, Hogan Lovells; former California Secretary for Resources.

SESSION III: JULY 31, 2015, PRESIDENT'S COUNCIL ON ENVIRONMENTAL QUALITY, WASHINGTON, D.C.

Host: Tim Male, CEQ.

Moderators: Tim Male, CEQ, Lindell Marsh, CCG and Alejandro Camacho, CLEANR

Participants:

Timothy Male, Deputy Associate Director for Wildlife, CEQ; Tomer Hasson, DOI, Office of the Secretary; Manisha Patel, CEQ; Elizabeth DePentu, CEQ; Michael Bean, DOI. Chief Deputy Asst. Sec., USFWS; Craig Aubrey, FWS; Trish Adams, FWS, Head of National HCP Office; Bret Birdsong, Assistant Solicitor DOI; Ted Boling, Assistant Solicitor Fish, Wildlife and Parks; Jim Lyons, DOI/Dep.Asst.Sec. Land; Therese Bradford, USBR; Klamath Falls, Ore. (prior: ACOE, USFWS, US Forest Service), USACE; David Olson, Regulatory Manager; James Murley, Executive Director, South Florida Regional Planning Council; Kyle Hathaway, EPA; Palmer Hough, UDDOT; Paul Heberling, Transportation Specialist, Office of the Deputy Secretary for Policy, FHW; Gerald Solomon, Director of Project Development and

Environmental Review, USDOT; Shoshanna Lew, Asst. Sec. for Transportation Policy; Denny Grossman, Office of Planning and Research; California Strategic Growth Council; Lindell Marsh, Center for Collaboration in Governance; Douglas P. Wheeler, Hogan Lovells; Prof. Alejandro Camacho, CLEANR; Prof. Emeritus, Martin Wachs, UCLA; Jaimee Lederman, UCLA PhD Candidate; Elizabeth Taylor, Atty, CLEANR; Melissa Kelly, Atty, CLEANR; Mark Kramer, TNC/California HCP Coalition; Steve Quarles, Nossaman LLC; California Coalition for Habitat Conservation Planning; Jim Pugh, Sheppard Mullin; Ya-Wei Li, Defenders of Wildlife; David Zippin, ICF International; Jim McElfish, Environmental Law Institute (ELI); Kelly Reed, Director of Government Relations, Conservation Fund; Wayne Spencer, Conservation Biology Institute; and, Shannon Eggleston, Director for Environmental Programs and Kate Kurgan, AASHTO.

Ancillary Small Group Meetings, Washington, D.C.: hosted by the Environmental Law Institute; the American Association of State Transportation Officials and the US Department of Transportation, each including participants from the CEQ session.

ROUNDTABLE: JULY 15, 2015, ROUNDTABLE REFLECTIONS ON THE NATURAL COMMUNITY CONSERVATION PLANNING EXPERIENCE IN SOUTHERN CALIFORNIA.

Host: CLEANR, UCI Law

Moderator: Alejandro Camacho, UCI Law

Participants:

Jim Bartel, U.S. Fish and Wildlife Service (USFWS) (retired); Michael Beck, Endangered Habitats League; Alejandro Camacho, U.C. Irvine; Richard Demerjian, U.C. Irvine; Keith Greer, San Diego Association of Governments; Travis Huxman, U.C. Irvine; Doug Johnson, California Invasive Plant Council; Melissa Kelly, U.C. Irvine; Charles Landry, Western Riverside Regional Conservation Authority; Lindell Marsh, Center for Collaboration in Governance; Monica Parisi, California Department of Fish and Wildlife; Kristine Preston, U.S. Geological Survey; Matthew Rahn, San Diego State University; Jonathan Snyder, USFWS; Jim Sulentic, Nature Reserve of Orange County; Elizabeth Taylor, U.C. Irvine; Rob Thornton, Nossaman LLP; Paul Weiland, Nossaman LLP.

Appendix B:

Area-wide MSHCPs Nationwide

TABLE 1.0: LIST OF LARGE-SCALE MSHCPS:

Plan	Primary Covered Activities*	States	Status (Jan 2016)	Size (Ac) (>100,000 ac)
Oregon State Parks Snowy Plover HCP	Recreation	OR	Approved	100,000
AACity of Seattle Cedar River City of Seattle Cedar River HCP	Water Management	WA	Approved	>100,000
Plum Creek Timber HCP	Timber Harvest	WA, ID, MT	Approved	1,690,000
Plum Creek Native Fish HCP	Timber Harvest	Same?	Approved	710,000
Washington Forest Practices HCP	Timber Harvest	WA	Approved	9,300,000
Washington DNR Aquatic Lands HCP	Water Management	WA	Approved	2,600,000
Sonoran Desert Conservation Plan	Urban Development	AZ	In Process	
Pima County MSCP	Urban Development	AZ	In Process	5,900,000
Lower Colorado Multi Species Conservation Plan	Water Management	CA, AZ, NV	Approved	717,000
Clark County MSCP	Urban Development	NV	Approved	5,000,000
Lincoln County HCP	Urban Development	NV	Approved	1,780,000
Washington County HCP	Urban Development	UT	Approved	135,000
Iron County Prairie Dog HCP	Urban Development	UT	Approved	280,960
Mendocino Redwood Company HCP/NCCP	Timber Harvest	CA	In Process	213,240
Yuba/Sutter County HCP/NCCP	Urban Development	CA	In Process	469,271
Placer County Conservation Plan	Urban Development	CA	In Process	275,000
South Sacramento County HCP	Urban Development	CA	In Process	374,000
Solano County HCP	Urban Development	CA	In Process	580,000
East Contra Costa County HCP/NCCP	Urban Development	CA	Approved	175,000
San Joaquin County HCP	Urban Development	CA	Approved	800,000
Santa Clara Valley Habitat Plan	Urban Development	CA	Approved	525,000
Butte Regional Conservation Plan	Urban Development	CA	In Process	564,270
Metro Bakersfield HCP	Urban Development	CA	Approved	262,000
Western Riverside County MSHCP	Urban Development	CA	Approved	1,300,000
Coachella Valley MSHCP	Urban Development	CA	Approved	1,200,000
Southern Orange County HCP	Urban Development	CA	Approved	132,000
San Diego North County MSCP	Urban Development	CA	In Process	345,544
North San Diego MHCP	Urban Development	CA	Approved	<100,000
South San Diego MSCP	Urban Development	CA	Approved	500,000
Yolo County HCP/NCCP	Urban Development	CA	In Process	653,549
San Luis Obispo County HCP/NCCP	Urban Development	CA	In Process	
Humboldt Redwood Company HCP	Timber Harvest	CA	Approved	211,700
Massachussets Beaches HCP	Recreation	MA	In Process	150,000
Pennsylvania State Forest Lands HCP	Timber Harvest	PA	In Process	3,800,000
Midwest Wind Energy HCP	Renewable Energy	8 states	In Process	294,800,000
Great Plains Wind Energy HCP	Renewable Energy	9 states	In Process	268,000,000

Plan	Primary Covered Activities*	States	Status (Jan 2016)	Size (Ac) (>100,000 ac)
Edwards Aquifer HCP	Water Management	TX	Approved	10,758,976
Southern Edwards Plateau HCP	Urban Development	TX	Approved	3,621,699
Williamson County HCP	Urban Development	TX	Approved	726,000
Hays County HCP	Urban Development	TX	Approved	444,000
Balcones Canyonlands Conservation Plan	Urban Development	TX	Approved	633,000
NiSource HCP	Gas and Electric Utilities	14 states	Approved	9,000,000
Pacific Gas & Electric San Joaquin Valley O&M HCP	Gas and Electric Utilities	CA	Approved	276,000
Pacific Gas & Electric Bay Area O&M HCP	Gas and Electric Utilities	CA	In Process	896,000
San Diego Gas & Electric HCP/NCCP	Gas and Electric Utilities	CA	Approved	992,000
Salt River HCP	Water Management	AZ	Approved	<100,000
International Paper HCP	Timber Harvest	AL	Approved	<100,000
State of Georgia Red Cockaded Woodpecker HCP	Timber Harvest	GA	Approved	10,900,000
Florida Beaches HCP	Urban Development	FL	In Process	<100,000
Douglas County HCP	Urban Development	CO	Approved	<100,000
ESA Oil&Gas Coalition HCP	Oil & Gas Development	PA, WV, OH	In Process	25,000,000
American Burying Beetle Oil & Gas Industry Conservation Plan (GCP)	Oil & Gas Development	OK	Approved	22,000,000
Lost Pines HCP	Urban Development	TX	Approved	126,000
Alabama Beach Mouse GCP	Urban Development	AL	Approved	<100,000
Florida Scrub Jay GCP	Urban Development	FL	Approved	<100,000
Karner Blue Butterfly State HCP	Timber Harvest	WI	Approved	7,000,000
Cave Dwelling Bat Forest HCP	Timber Harvest	MI, MI, WI	In Process	
AEP American Burying Beetle HCP	Gas and Electric Utilities	OK, AR, TX	In Process	>100,000
Oncor Utility HCP	Gas and Electric Utilities	TX	Approved	>100,000
Kauai Electric HCP	Gas and Electric Utilities	HI	In Process	350,000
Malpai Borderlands HCP	Rangeland Management	AZ, NM	Approved	500,000 (Arizona), 300,000 (New Mexico)
San Luis Valley HCP	Water Management	CO	Approved	2,000,000
Douglas County HCP	Urban Development	Washington	In Process	2,000,000
Bakersfield Habitat Conservation Plan	Urban Development	CA	In process	2,500,000
Washington DNR Forest Lands HCP	Land Management	WA	Approved	1,600,000
Weyerhaeuser Millicoma Tree Farm HCP	Land Management	OR	Approved	206,000
Bastrop Utilities HCP	Gas and Electric Utilities	TX	Approved	142,256
Comal County RHCP	Urban Development	TX	Approved	326,000
Plum Creek Timber Company HCP	Timber Harvest	LA, AR	Approved	261,000
Potlatch HCP	Timber Harvest	AR	Approved	233,000
Mona Department of Natural Resources and Conservation Lands HCP	Timber Harvest	MT	Approved	560,000
Orange County HCP Central/Coastal	Urban Development	CA	Approved	208,000
San Diego Gas and Electric Quino Checkerspot Butterfly Low Effect HCP	Utility	CA	Approved	208,000

Florida Case Study Summary Overview

Appendix C:

South Florida is an integrated blend of land, air and water, with: an elevation ranging to only 14 feet above sea-level at Lake Okeechobee; among the highest levels of bio-diversity in the nation; and, the only ecosystem to support subtropical ecological communities in the continental United States. All particularly vulnerable to changes in humidity, temperature, and precipitation. It is susceptible to hurricanes, floods, and droughts as well as severe growth pressures (the State grew from 2.7 million in 1950 to now about 20 million), and, especially, climate change. As a result, these challenges have resulted in programs, communities and relationships of local, State and federal agencies that provide a valuable case study with respect to habitat conservation planning.

Starting in the mid 1960's, South Florida experienced saltwater intrusion that threatened fresh-water supplies, muck fires, destruction of wetlands, the extensive pollution of almost every river, stream, and water body located in the peninsula, and extensive damage to beaches and dune systems. In response, the state focused on managing the sensitive balance between major population growth, the conservation of natural habitat, and the management of surface water resources. Florida responded with regional conservation efforts, legislation and programs that both mandated comprehensive growth management and provided funding for conservation land acquisition.

The response was at the forefront, nationally, of innovation, embracing ideas (e.g., "Development of Regional Impact" and "Areas of Critical State Concern") that were being developed in connection with the then evolving American Law Institute's Model Land Development Code (and finally adopted in 1976). (Mandelker, D., Fred Bosselman's Legacy to Land Use Reform (Journal of Land Use and Environmental Law, p. 11, 17:1, Fall, 2001). Four key pieces of State legislation followed (with significant support from then State Senator Bob Graham, subsequently Governor and United States Senator, and Professor John DeGrove, his mentor (See generally, Powell, David L., Growth Management: Florida's Past as Prologue for the Future, Fla. St. UL Rev. 28 (2000) and Farr, James and Brock, Greg, Florida's Landmark Programs for Conservation and Recreation Land Acquisition (Kentucky Institute for Environmental and Sustainable Development, University of Louisville, Sustain, 14(2006):

- ***Environmental Land and Water Management Act*** (Chapter 380, Florida Statutes, 1972): providing for the management of environmental concerns with respect to lands and waters of the state, including provisions for the establishment of Areas of Critical State Concern and the Development of Regional Impacts.
 - ▶ **"Areas of Critical State Concern"**: The state was authorized to designate Areas of Critical State Concern to limit local land use authority. The Florida Supreme Court ruled that this was an unconstitutional delegation to the executive branch, but subsequent State legislation addressed this concern. Local agencies were given six months to develop regulations to protect state-regional interests. Initially limited to a 500,000 total designation area, it was later expanded to 1.8 million acres, an amount equal to 5% of the total land area of the state. The state's first areas of critical statewide concern were Big Cypress Swamp in southwest Florida, Green Swamp in central Florida, and the Florida Keys.
 - ▶ **"Development of Regional Impacts (DRIs)"**: Empowered Regional Planning Agencies to develop regional plans, for the State to develop a State level plan, and for local governments and Regional Planning Agencies to prepare plans consistent with State policies and programs and to provide for consistency and functional implementation programs. The DRI process, through subsequent expansive legislation, resulted in a powerful tool to assure that developers complied with local, regional, and state development directives. The Development of Regional Impact process was effectively repealed by the 2015 Legislature. Vested rights in formerly approved DRIs were preserved, but developers of large scale projects are no longer required to go through the DRI process. Currently, a "Sector Plan" process exists under Florida Statutes 163.3245,

Florida Statutes for development projects with a land area of 15,000 acres or greater. This process is optional for landowners and developers.

- **Water Resources Act (Chapter 373, Florida Statutes, 1972):** established a regional water management and regulatory program based on watersheds with five water management districts (“WMDs”) governed by citizen boards appointed by the Governor. Once considered the foremost water management program in the Nation, in 2011 the strength of WMD’s was dramatically diminished by budget and staff reductions, and close oversight and supervision by the Governor’s Office and Department of Environmental Affairs.
- **Land Conservation Act (Chapter 259, Florida Statutes, 1972):** One of the nation’s most extensive public lands acquisition programs for the conservation of certain lands, this act includes a provision for funding by the authorization to issue bonds, known as the Environmental Endangered Lands (“EEL”) program. A statewide vote authorized an initial bond issuance of \$200 million for the acquisition of environmentally sensitive lands, and \$40 million in recreation bonds, all to be repaid from the proceeds of a documentary stamp tax on real estate transactions.
- **Conservation and Recreation Lands Program (CARL) (1979):** Replaced and expanded the EEL program, centered on a recurring revenue stream placed into a dedicated trust. Until 1987 it received funds from an excise tax on mineral extraction. From 1987 through 1990, it also received funds from documentary stamp taxes on real estate transactions, similar to EEL. From 1979 through 1990, the CARL Program protected approximately 181,000 acres of conservation and recreation lands at a cost of nearly \$356 million.
- **Save Our Coast and Save Our Rivers (1981):** At the urging of the Governor Bob Graham to expand the State’s ability to acquire conservation lands, it authorized a bond issue of \$275 million to purchase land along the coast, re-paid by proceeds from a documentary stamp tax on real estate transactions that were dedicated to the Land Acquisition Trust Fund (“LATF”; established in 1963, but funded commencing in 1981). This program resulted in the purchase of over 73 miles of coastline and an increase in state park access to the coast. Under the Save Our Rivers program, the legislature created the Water Management Lands Trust Fund and authorized funding from a real estate documentary stamp tax. Funds were distributed to the five Water Management Districts on the basis of relative population. At present, it has been used to purchase over 1.7 million acres of land held and managed by the water districts, including much of the Everglades.

Additional legislation followed:

- **State Comprehensive Planning Act (Chapter 23, Florida Statutes, 1984):** Drafted in 1972 but adopted in 1985 as Chapter 187 of the Florida Statutes, this mandate sets the foundation for growth management planning and provides a clear framework for regional and local land use within a state growth plan. Within the 1986 Glitch Bill (SB 978, Chapter 86-191), it set out to solidify the development, review, and consistency of local, state, and regional plans. “Concurrency” of development and infrastructure was provided for and required that development be accompanied by a finding that current adequate infrastructure is to be in place to service the new development. While not directly a conservation provision, it evidenced the State’s focus on comprehensive approaches and suggested a mechanism that has replicated (e.g., in California with respect to a similar water supply concurrency requirement).
- **Preservation 2000 (1991):** In response to population growth pressures and rising land prices, coupled with less than ideal acquisition rates, the Commission on the Future of Florida’s Environment estimated a need for \$5 billion for targeted acquisition. In response, the legislature passed Preservation 2000. Despite recession era belt tightening, Preservation 2000 received funding due to strong voter support of environmental programs. Rather than relying upon a year-to-year collection of revenue from the documentary stamp tax, Preservation 2000 relied upon selling long-term bonds to fund land acquisition. From 1991 to 2000, \$3 billion in bonds were sold. Funds went towards the acquisition of outdoor recreation and conservation land. The Florida Communities Trust (FCT) program under the Growth Management Act of 1985 was used for this purpose, receiving funding to assist local governments in the implementation of the conservation, open space, recreation, and coastal elements of the comprehensive plan and CARL and Save our Rivers received additional funding. Preservation 2000 successfully preserved nearly 150,000 acres of land.

- **Forever Florida (1999):** created by the State legislature in 1999 to succeed Preservation 2000, authorized the issuance of not more than \$3 billion in bonds for land acquisition, water resource development projects, the preservation and restoration of open space and greenways, and for outdoor recreation purposes. The funding was distributed by the Florida Department of Environmental Protection to various state agencies for land acquisition. It is the largest public lands acquisition of its kind in the United States, and as of 2001 had funded the acquisition of over 700,000 acres of land at a cost of \$2.89 billion. (http://www.dep.state.fl.us/lands/fl_forever.htm)
- **The South Florida Eco-system Restoration Program:** In 1983 Governor Graham established the Save Our Everglades (“SOE”) Program with the goal of protecting and restoring the Everglades. The Everglades Coalition, consisting of national and state conservation organizations was established in 1984 to assist Florida in implementing the SOE. This effort involved the federal government and in 1992 Congress authorized the review study of the Central and Southern Florida Project by the Corps of Engineers which was completed in 1998. The restudy is the basis of the 1999 Comprehensive Everglades Restoration Plan (“CERP”) which is today’s Everglades restoration plan. The Governor’s Commission for a Sustainable South Florida, appointed by Governor Chiles in 1994 worked closely with the Corps and made substantial recommendations that became a part of CERP. Also, in 1993 Secretary of the Interior Babbitt established a federal task force that was formally established by Congress in 1996 for the purpose of consulting with and providing recommendation to the Corps’ review study and CERP. The Corps and South Florida Water Management District, local sponsor of the South Florida Project (the object of the review study and CERP), have the principle responsibilities for implementing CERP. Original estimates were that CERP would cost \$8 billion and be completed in 2039, with the federal government and Florida splitting the cost 50/50.
- **Constitutional Amendment:** In 2014 voters enacted a constitutional amendment attempting to establish a constitutional requirement for continuation of state environmental land acquisition efforts. Known as “Amendment 1” and the “Water and Land Legacy Amendment”, the ballot title read: “Water and Land Conservation - Dedicates funds to acquire and restore Florida conservation and recreation lands”. The effect of the amendment was to dedicate 33% of the documentary stamp tax on deeds, mortgages and similar recorded instruments to environmental land purchases and management. Since approval of this amendment by more than 75% of the electorate voting in the 2014 general election, the implementation of this amendment has been frustrated by resistance in the Legislature. The Legislature has attempted to nullify the amendment by diverting most of the revenues (over \$800 million annually) to paying for ongoing operations and salaries in several state agencies rather than land acquisition. Several lawsuits against the Legislature and the state are now pending in attempt to enforce the letter and intent of the Constitutional amendment.

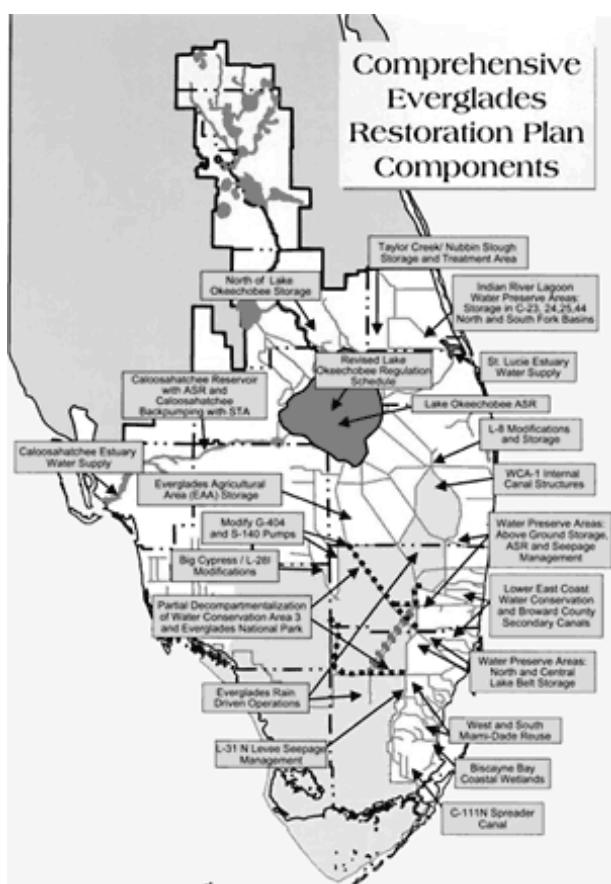
The Role of the HCPs

From the early State legislation of the 1970’s, a major focus of the State in addressing conservation has been on both the regulation of Areas of Critical State Concern (such as the Florida Keys) and Development of Regional Impacts coupled with an aggressive program of State-funded land and water-related acquisitions. However, in 1983 under a Gubernatorial Executive Order, then Governor Graham, authorized a collaborative effort to develop an HCP for North Key Largo, the twelve mile key, immediately off the Florida mainland. The Department of Community of Affairs, with DeGrove as Director, was directed to oversee an open collaborative process to develop an HCP by the constituency of affected agencies and interests, included, among others, the major landowners, National and Florida Audubon Societies, the County of Monroe, State and federal agencies. At the end of a two year research and scoping process (looking at concerns, issues, impacts and alternatives), the group came up with two major alternatives that were generally acceptable: total conservation (buy out the landowners) or clustered developed around the four navigable access points on the key, with the development areas to buy-out the remainder and conserve the remaining habitat). The result was that the entire undeveloped portion of the Key was acquired and conserved by the State. Significantly, this collaborative process provided the seeds for the Eastward Ho!/Everglades restoration effort that, in turn, led to the South Florida Eco-System Restoration Program (led in large-part by DeGrove and Graham).

With that major South Florida program underway under the collaboration of State and federal agencies, other formal HCP efforts within the State tended to focus on small individual projects and County-wide HCPs focused on the Scrub-Jay and Beach Mouse (but covering other listed and non-listed species as well).

Comment: P. Adams, USFWS: The 2004/2005 hurricane season put a spot-light on the State's vulnerability under the ESA for their permitting activities associated with the Coastal Construction Control Line program which authorizes coastal construction (private and commercial development), seawalls, dune restoration, etc. Since they occur above MHW, there is no Federal nexus. After threat of litigation by an NGO for non-compliance with the ESA, the State began the ITP process and received HCP Assistance Grants from the Service for the last 8-9 years. The statewide HCP process began around 2005-6 and is the largest HCP in Florida. However, due to lack of support from the state legislature and administration, the effort is floundering and may be abandoned. It is an accurate statement that the Service currently handles ITPs on a project- by-project basis; however, not all of them are small, such as the East Collier Multi-species HCP for Florida panther currently in draft. And ITPs for Charlotte and Walton Counties (check) have been recently issued and the state-wide Florida Beaches HCP is active.

Period of Change



By 2010, the Florida story was changing. It has been reported by conservation interests that State conservation efforts have been significantly curtailed. (Comments by Charles Lee, National Audubon, 2015, generally, as follows): The Department of Community Affairs has been abolished. A small vestige of the duties of DCA has been transferred to the Department of Economic Opportunity. While there is a shell structure suggesting review of local government plans still in the statutes, it is basically nonfunctional under that agency. The Regional Planning Councils have not received State funding for three years and local and regional funding sources are strained. The Forever Florida program remains in the statutes as a framework, but has not been significantly funded in three years. Last year (2014), the Department of Environmental Protection initiated a "land surplus program" which has targeted conservation parcels around the state for declaration of surplus and sale. A number of tracts in the northern Florida Keys were placed on the surplus list. The surplus program is now stalled, but there is still pressure to "sell all unneeded land". The funding of Water Management Districts has been reduced and budgets cut, accompanied by tax rollbacks ordered by the Governor and Legislature. The staffs of some of the districts have shrunk significantly. The districts are functioning on "reserve funds". There are suggestions of walking away from the remaining features of Everglades Restoration. The "Comprehensive Everglades Planning Process" which was initiated to formulate definitive plans to restore flow through the central Everglades by reconnecting the River of Grass by taking down levees and filling canals is meeting significant resistance from agricultural interests.

Significantly, shortly after 2010, the Peninsular Florida LCC was established, providing a place for collaboration among local, State and federal agencies and interests focused on wildlife conservation in and adjacent to Florida (see the broader discussion of LCCs p. 11, *supra*). Further, former Governor Bob Graham, responsible for much of Florida's landmark conservation efforts, provided leadership in the formation of the Florida Conservation Coalition of environmental groups and others to protect Florida water quality. The Coalition supported the adoption of the Water and Land Conservation amendment to the State Constitution described above to dedicate funding for conservation, management, and restoration of water and land resources. The amendment will provide more than \$10 billion for water and land conservation in Florida without any tax increase.

Appendix D: The Role of Science and Mapping

Comments by James R. Strittholt, President, Conservation Biology Institute.

Effective HCPs rely on high-quality conservation science and rapidly evolving mapping technologies. Advances in both fields have reached a point of potentially transforming how HCPs are developed and implemented at any spatial extent. Government, academia, and conservation NGOs have led the way in creating and maintaining the most relevant spatial data and information needed for HCPs, but traditional social and political norms have resulted in tremendous barriers to making the best of what we know about species and natural communities and have frequently made meaningful stakeholder participation in the process extremely difficult. Four major problems have plagued efficient and effective use of these resources including the lack of data access; a means for easy data integration; an easy-to-use mapping system; and little support for collaboration. The cost of trying to address these fundamental deficiencies has seriously burdened the HCP process in terms of time and money and has often resulted in plans that are ineffective or difficult to implement.

Data Basin (www.databasin.org) is an online conservation data sharing and collaboration platform that was developed by the Conservation Biology Institute to address the four major barriers listed above. Data Basin was built to deliver high-quality conservation science to technical and non-technical users alike using maps as the primary currency. Users connect to Data Basin using any of the popular web browsers (no installing of expensive software) for immediate access to over 20,000 spatial datasets and growing. Users can explore and easily integrate the datasets they find there (even add in their own data if they wish) to create, customize, save, and share their maps. Users are provided with their own private workspace where they can save all of their content and they are given total control over how they choose to share their work with others. Private or public working groups can be created and managed by users to allow collaborators to focus on a particular issue, solve a problem, or negotiate an agreement.

Over the last few years, Data Basin has been used to support the creation of HCPs; the most noteworthy being the Desert Renewable Energy Conservation Plan (DRECP) in southern California. This effort, which included the creation of a customized Data Basin “gateway” focused on this geography (www.drecp.databasin.org), resulted in the aggregation of nearly a thousand spatial datasets from dozens of sources and numerous, sophisticated spatial models. Special tools were built to provide maximum transparency of the analytical work while the content was organized in logical ways to help users easily locate and use it. Thousands of stakeholders were given unprecedented access to the inputs to the plan and were provided the means to understand the science behind the planning process. Plan alternatives were presented to stakeholders via the web resulting in the ability to dynamically explore the findings rather than solely relying on small paper maps. Review tools allowed users to comment on the maps to ask questions, raise objections, or suggest alternative solutions. User comments were then exported in a standard format and easily attached to comment letters. This advancement resulted in much clearer and useful comments and, since they were standardized, made it much easier for the responding agencies to process them. As transformative as this has been for the DRECP, it is still not enough. There are two other areas that take full advantage of the Data Basin platform.

The first is the need for specialized applications that help interpret the science, especially as it pertains to some of the more complex problems that impact HCPs such as climate change. Users need more complex topics presented in an easy-to-use application that allows flexible interaction with the content yielding meaningful, actionable results (e.g., California Climate Console (www.climateconsole.org/ca)). Another application is currently under development to identify least conflict lands for renewable energy development throughout California and another one to support mitigation decisions once development has been approved.

The second area is developing tools that allow for easy monitoring of key plan indicators, management actions, and routine updating of data and information to support adaptive management. For example, tools are being built within the Data Basin framework that allows for the incorporation of data through routine field surveys collected by ground crews as well as data from

instrumentation from various types of sensors (e.g., water quality sensors and acoustic sensors for bats and birds). Keeping the data and information up-to-date is critical to a successful HCP and having a durable system to house it all is fundamental.

Without disrupting existing data managing institutions and the HCP process, Data Basin and its various applications have found a way to bust the silos and provide all HCP participants with access to high-quality science, transparency, inclusive participation, integration of data and ideas, interpretation of important concepts, and the means to actively support adaptive management all in a cost effective manner.

Do Habitat Conservation Plans Deserve Wider Implementation?

Appendix E:

THE DEBATE

AN EXCERPT FROM THE ENVIRONMENTAL FORUM

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The first Habitat Conservation Plan under the Endangered Species Act was approved in 1983. It sought to reconcile and manage the conservation of wildlife habitat of over 50 species (including some listed or proposed for listing as threatened or endangered under the ESA) and anticipated development within the 3,000-acre San Bruno Mountain ecosystem south of San Francisco. The effort was a pioneering, collaborative approach relying on two elements: an area-wide geographic plan, jointly developed and implemented by the affected agencies and interests, and a resulting enforceable implementation agreement, providing the basis for public agency approvals and permits. The congressional conference report accompanying the 1982 reauthorization of the ESA stated that the “the San Bruno Mountain Plan is the model” for providing a basis for “incidental take permits” under Section 10 of the ESA, as well as providing a platform for compliance with the regulations of other participating federal, state, and local agencies. For the private sector, it offered predictability and assurances that compatible development could proceed. For environmentalists, it provided greater certainty that species would recover. There are now more than 700 HCPs nationwide, with additional plans in preparation. While a number of HCPs have been based on a more conventional model of bilateral, single-project permits that merely seek to mitigate harm to listed species, the more noteworthy HCPs are landscape-wide and focused on multiple species. These plans each cover hundreds if not millions of acres (with one plan covering an entire state), including urban areas (in California, Texas, and Florida), timberlands (the Pacific Northwest), interstate utility lines and flyways (the Midwest and East), energy projects (22.5 million acres in the California desert) and major riparian ways (the Colorado River). As this concept matures, it is outgrowing the adhoc way in which plans have been crafted, funded, and managed. The question is how can this areawide, collaborative HCP concept be improved and implemented to more expeditiously and effectively provide for habitat conservation in concert with needed infrastructure and development?



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VISIONARY BUT FLAWED PROGRAM NEEDS TO EVOLVE

BY ALEJANDRO E. CAMACHO

The Habitat Conservation Plan program has fundamentally changed wildlife management in the United States. The active promotion and proliferation of HCPs may even have saved the Endangered Species Act from repeal by an often hostile Congress.

Many prominent HCPs were innovative experiments in regional governance, seeking to manage the development and conservation of ecosystems across various jurisdictions. Many were formed collaboratively with active participation from a range of interests, at times avoiding the prolonged conflicts over resource use for which the act had often been criticized. A few HCPs even made significant innovations in adaptive management, promoting active monitoring and adjustment over time to account for new information or changed circumstances.

Even so, a number of deficiencies in the program have consistently been given insufficient attention and resources by government authorities and proponents of HCPs, despite how essential these features are to the program's effectiveness. First, key decisions by the Services deem the active participation in planning and implementation of interested parties to be at the option of the applicant. Unsurprisingly, though, a few HCPs — typically larger-scale, with government agency applicants — may be promising examples of the potential of collaborative regulation, for many HCPs interested stakeholders were relegated to a narrow and late role, after the Services and the developer-applicant have negotiated the vast majority of the plan. As such, many HCPs are merely bilateral agreements authorizing the take of important habitat and species.

Furthermore, though monitoring and sufficient funding for implementation are both required under the ESA, they have been systematically neglected. The HCP program relies heavily on permittees to be the principal monitor of the effect of the approved take and the effectiveness of adopted conservation measures, on the premise that permittees have both the incentive and ability to assess conformity with public goals. Sadly, studies show monitoring has been woefully inadequate.

Moreover, though HCPs are regularly adopted under conditions of significant uncertainty, subsequent adjustment of implementation strategies to integrate new information or changed circumstances is rare. The Services have repeatedly acknowledged that adaptive management and contingency planning are valuable, but empirical evidence shows a disinclination to their implementation. Regrettably, recent reviews by the Ecological Society of America and Defenders of Wildlife confirm that weak monitoring and adaptive management are mirrored in the ESA's interagency consultation and endangered species recovery programs.

The trend toward landscape-scale plans is laudable, as there are potentially significant economic and conservation advantages to expanding the scale, species coverage, and duration of HCPs. Yet the increases in complexity and uncertainty from doing so are also considerable and undervalued. A successful HCP program must ensure sufficient resources and incentives for regulators and applicants to promote meaningful participation, monitoring, and adaptive management, including the integration of interested parties in information generation and

implementation. Investment in strategies that promote learning, as well as advanced mitigation, can also reduce uncertainty.

The program's flaws are especially alarming in light of the most significant issue likely to shape the future of habitat conservation: promoting long-term ecological health despite the potentially overwhelming effects of climate change. Because existing HCPs were not designed (and thus do not seek) to account for climate change, they are premised on faulty projections and subject to significantly more uncertainty than projected when approved.

Climate change thus necessitates an intensified commitment by the Services to forecast and manage unforeseen circumstances under these plans — notwithstanding the limited resources historically dedicated to doing so. Future HCPs must be required to more thoroughly anticipate changing conditions and share the burden of managing such change. The consequences of not doing so will be experienced for decades in light of the horizon for many large HCPs.

Moreover, adapting place-based habitat conservation to ecological change will require large-scale planning that promotes linkages between conservation areas and integrates more dynamic and active conservation measures, such as assisted migration. Even so, a changing climate might ultimately require a fundamental reconsideration of the goals of the HCP program, which have been primarily premised on promoting or restoring species where they have historically occurred. Under the existing ESA, it is unclear how managers will be able to reconcile native and endangered species preservation when these will increasingly be incompatible in changing climatic conditions. More fundamentally, scientists and policymakers — and crucially the public — will ultimately have to grapple with profound questions about what long-term ecological health means, how to best foster it, and who should decide.

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AN ALL LANDS, ALL HANDS APPROACH

BY JIM LYONS

Nearly 500 million acres of federally administered public lands are managed by the Bureau of Land Management and Forest Service for multiple use and sustained yield. This mandate is particularly challenging to apply. Yet, less well understood is the critical role that federal lands can play in species conservation by anchoring conservation strategies that permit state and private lands to be managed in accordance with less restrictive management measures.

We saw this play out in efforts to protect the Northern Spotted Owl from extinction on forest lands in the Pacific Northwest in the early 1990s and, more recently, in the debate over conservation of the Greater sage grouse across 10 western states.

What is most interesting about these two issues — separated by decades — is how they reflect the evolution of conservation, our growing appreciation for the concept of landscape-level management, and the value of coordination and



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Land and Minerals Management
Department of the Interior

collaboration across land ownership and management types. Less appreciated is the important role that federal lands can play in providing private landowners and public land users with greater certainty in meeting economic development goals.

For the spotted owl, the commitment to protect areas of old-growth federal forests (administered by the Forest Service and BLM) from timber harvest benefitted the owl and, as key watersheds, the conservation of various salmonids. The commitment of these biologically rich public lands primarily to habitat protection enabled the Fish and Wildlife Service to develop Habitat Conservation Plans with private and state interests. This permitted greater flexibility in the management of private industrial, non-industrial, and state-administered forests to benefit commerce and meet government trust responsibilities through the development of HCPs.

A similar strategy was adopted to convince the FWS that listing of the Greater sage grouse as threatened or endangered was “not warranted,” as the Service determined in September 2015. Research and analysis had demonstrated that while the most important habitat areas for the grouse are scattered across public and private lands, more than half of the remaining sage grouse habitat is on BLM- and Forest Service-administered lands. The vast majority of the remaining lands essential to the bird’s survival are privately owned or administered by the states.

Conservation of the grouse and 350-plus other species also associated with the sagebrush ecosystem relies heavily on the protection and restoration of rangeland habitat on public lands as well as the adoption of conservation measures recommended by scientists, wildlife biologists, and resource managers incorporated in new resource management plans. In addition, the Natural Resources Conservation Service, through its Sage Grouse Initiative, provided financial and technical support to implement conservation practices on private lands across the species’ range.

To prevent the loss of sagebrush habitat due to rangeland fire — the primary threat to the sage grouse in the Great Basin — states and local interests, private landowners, and federal agencies worked together to develop a science-based, integrated strategy to prevent, suppress, and restore fire-impacted landscapes. Areas of high resistance to fire and climate change were identified and prioritized to improve the efficiency and efficacy of the strategy.

Coordination among federal agencies and collaboration with local, state, and private interests is essential to development and implementation of this conservation strategy. A federal policy team and a state-federal Sage Grouse Task Force provided continued dialogue and collaboration in developing conservation strategies across public and private lands.

This “all lands, all hands” approach to habitat management across the remaining range of the sage grouse permitted greater protection for the bird on federally administered public lands and affords states and private landowners greater flexibility in managing the remaining 40 percent of sage grouse habitat under their care. While the “not warranted” determination provides certainty against “take,” since the species is not listed, development of Candidate Conservation Agreements with Assurances on private lands and Candidate Conservation Agreements for federal rangeland permits provides added certainty that should listing be warranted in the future, continued application of the conservation

measures adopted as a part of these plans should allow continued use of these lands without concern for take.

Conservation has advanced in the past three decades as new concepts, tools, and technologies have been developed and applied to strategies to conserve the earth's biodiversity and prevent the listing of threatened and endangered species. The evolution of the concept of landscape-scale conservation; improved application of science and research; use of new technologies, such as modelling and Geographical Information Systems, to improve analysis and understanding of policy options; and greater emphasis on collaboration for bringing stakeholders together have revolutionized efforts to understand and address species and ecosystem needs. Nowhere are these changes more apparent and useful than in managing wide-ranging species on public and private lands.

Jim Lyons is deputy assistant secretary for lands and minerals management in the Department of the Interior and a lecturer and research scholar at the Yale School of Forestry and Environmental Studies.

THE FLAPPING OF BUTTERFLY WINGS —

36 YEARS LATER

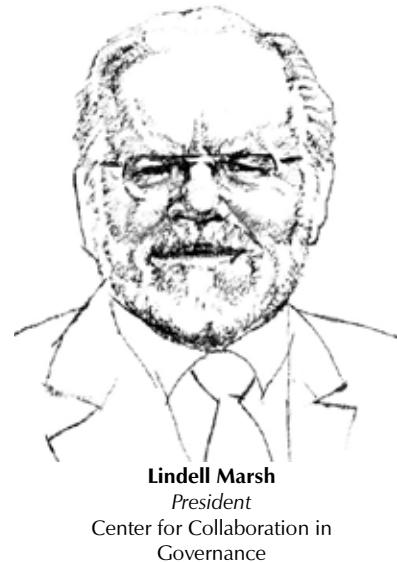
BY LINDELL MARSH

Thirty six years ago, faced with the proposed listing of the Callippe Silverspot butterfly as endangered under the federal Endangered Species Act, with no take permit available, my client, Visitacion Associates (Sherm Eubanks), in a brief letter, proposed to the Fish and Wildlife Service the preparation of a "Habitat Conservation Plan" covering its domain: the 3,000-acre San Bruno Mountain area, south of San Francisco.

Sherm described the HCP as "a positive management and conservation program approach that will effectively demonstrate the ability of concerned governmental agencies on all levels, as well as other interests, to work together to reconcile the many conflicting interests and concerns, provide guidance as to how these concerns can be included in future planning for similar areas, and assist us to reconcile wildlife considerations with economic and other relevant impacts."

Initially, FWS Director Lynn Greenwalt said no ("the Service doesn't do HCPs") but then agreed to explore it. Little more than two and a half years later, Tom Reid had completed a peer-reviewed study of the plan; Congress had added Section 10(a) to the ESA providing a needed incidental take permit; and together, San Mateo County, three cities, California Fish & Game, FWS (Don Barry), Visitacion, Save San Bruno Mountain Committee (Tom Adams), and I, and my associates Rob Thornton and Susan Hori, saw the environmental assessment and implementation agreement approved and the incidental take permit issued.

Today, there are some 700 HCPs completed or in process, covering millions of acres. But times have dramatically changed. It's time for a more robust programmatic approach to Habitat Conservation Planning.



Lindell Marsh
President
Center for Collaboration in
Governance

Today, information is gathered, managed, and shared across the nation (and worldwide), instantaneously, up and down our silo-like institutional hierarchies and across their boundaries — facilitating collaboration. In the same time, our population has grown by almost 100 million. Sustainability is an increasing concern: climate change, air, water, food, and biodiversity; the loss of nature preoccupies us. The principles underlying HCPs are now more relevant than ever — a collaborative approach among agencies and interests, to reconcile human impacts and biodiversity, in the context of sustainability. It's that simple. The question now confronts us: "How best"?

We need to learn from the past, not only from HCPs, but also from earlier national and state efforts: e.g., the proposed national land use policy legislation explored by President Nixon and Senator Henry Jackson (D-WA); the work of Fred Bosselman and the American Law Institute, reflected in Florida statutes; collaborative state/federal efforts with respect to special areas of national concern, such as the Chesapeake Bay watershed and the South Florida Ecosystem Restoration Plan and Task Force; the California Bay-Delta efforts; efforts regarding the deserts of the Southwest (e.g., the Desert Renewable Energy Conservation Plan); and, the recent Sage Grouse Plans.

Moving forward: The HCP experience has been largely ad hoc and focused on regulatory compliance for a specific geographic area. However, the HCP concept is potentially much broader and more "programmatic," including elements focused not only on regulatory compliance but on the formation of frameworks (e.g., by agreements of federal and state agencies and possibly others that address habitat conservation broadly and provide a conservation frame, contemplating, perhaps, multiple subsidiary HCPs and participants). These frameworks could address early and broad scientific ecosystem research and surveys; landscape-level acquisition and conservation in anticipation and advance of infrastructure and development (while ecosystems are intact and the cost is low); and, funding and financing approaches, e.g., similar to past programs for New Towns or in parallel with infrastructure funding, including advance mitigation, credits, and mitigation banks.

In developing such frameworks, we should consider the workings of recently authorized State Water Plans and Landscape Conservation Cooperatives, as well as other efforts such as the Sustainable Communities Partnership (among EPA, Interior, and the Department of Transportation), the Eco-Logical program (DOT and FWS), and the Sage Grouse Plans.

In thinking about the future of Habitat Conservation Planning and these frameworks, the key element is "collaboration." It is based on planning theory, not conflict-resolution, calling for mutual respect among those involved, plus truthfulness, dialogue, and civility. In turn, the centerpiece of the process is scoping, including the collaborative identification of concerns, opportunities, and considerations, scientific research, and the exploration of alternatives. Finally, leadership — not command-and-control oversight, but, rather, bringing to bear a sort of wisdom, an appreciation of the mandate of each participant, together with a sense of compassion and interest in the mandates and concerns of them all.

Collaboration and innovation — we can and should continue to embrace the spirit expressed in Sherm's letter of thirty-six years ago.

Lindell Marsh is president of the Center for Collaboration in Governance and a practicing attorney at law.

INCORPORATING RELEVANT LAWS INTO PLANNING

BY T. O'ROURKE BRADFORD

Habitat conservation planning efforts range from simple single-species plans with one jurisdiction to multiple species HCPs across many jurisdictions. The more complex the plan and the more numerous the jurisdictions, the more complex are the issues for species, tradeoffs between species, jurisdictional alignments, and politics.

Usually, when a jurisdiction completes an HCP, it assumes that federal permitting is complete. When the HCP is part of a state effort, such as in California's Natural Communities Conservation Plan, the expectation includes state permits. In California, jurisdictions usually receive both an HCP and NCCP. These efforts take years and cost millions of dollars.

How, and why, should an already complicated process be expanded to include the other processes and laws? Failure to incorporate the Clean Water Act and the National Historic Preservation Act into HCPs results in delays of the development process, and a loss of funding for conservation efforts. For example, the Western Riverside Habitat Conservation Plan includes a policy that protects riparian species such as the arroyo toad and numerous riparian birds.

However, this policy does not address CWA requirements. Agencies that implement the act, including the Army Corps of Engineers and the California Water Resources Control Board, do not generally participate in the development of HCPs. Therefore, the analysis, mitigation, and environmental impact statements needed under federal and state laws, and needed for the CWA Section 404 and 401 permits, are not included in HCPs.

This lack of coordination creates confusion for developers regarding permits and Endangered Species Act coverage under the HCP. Although the ESA agencies addressed the riparian/riverine issues related to species in the HCP/NCCP, the developers are then required to obtain CWA permits from the corps and the state WRCB, complete additional environmental impact assessments, and provide mitigation for the CWA permits.

Even though these same projects and jurisdictions have ESA coverage under the HCP, the CWA permitting agencies are required to consult with the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife to obtain ESA coverage. In some cases, a "streamlined" consultation occurs. In many cases, due to the lack of alignment of the ESA and CWA requirements, or minor or major changes desired by agencies or developers, an informal or formal ESA consultation is required. The consultations take several months to several years to complete.



Therese O'Rourke Bradford
Area Manager
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In California, the DFW issues an NCCP permit for the state's Endangered Species Act. Additionally, they require a streambed alteration agreement. This process is closely aligned with the CWA permits. When developers discover they need an additional permit from the same department that issued the NCCP, they lose confidence and support for the HCP/NCCP.

In Palm Springs, the Coachella Valley Multiple Species Habitat Conservation Plan focuses on maintaining natural processes such as fluvial and aeolian transport and wildlife corridors. The corps was not involved in the negotiations for the HCP; however, the ESA agencies coordinated with the corps regarding future permitting needs for the CWA.

A few years after the HCP was completed, the corps and the Regional Water Quality Control Board worked with the implementing agency to create a CWA-based In-Lieu Fee Program to complement the HCP, assist in funding the plan, and streamline CWA permitting in the area covered by the plan.

There are additional opportunities for jurisdictions with HCPs to work with the CWA agencies to create streamlined permit mechanisms, such as mitigation banks and in-lieu fee programs. Ideally these processes would be done concurrently. However, if the entities involved in the development of HCPs understand other laws and requirements and would work with the other permitting agencies, HCPs could serve as the base document and National Environmental Policy Act access point for other permitting requirements. Tools such as the joint corps- EPA Mitigation Rule can complement and assist in funding.

Additionally, a programmatic agreement, issued by the state historic preservation office for its NHPA requirements, could be created for the area covered by the HCP or in-lieu fee/mitigation bank. This could be another benefit in a coordinated process. Tribal consultation ensures that sacred places and important sites are addressed within the landscape planning effort. This effort can preserve important areas and avoid future development conflicts. HCPs can be a tool in high-resource-conflict areas to address listed species, water allocation, land use, and tribal concerns. Integrating environmental laws and landscapescale planning efforts can be the basis for resolving long-standing resource conflicts. Optimizing analyses, aligning NEPA decisions, and coordinating permitting processes saves time and money and improves conservation.

Therese O'Rourke Bradford has worked on landscape-level planning efforts for several federal agencies and a nonprofit organization. She now works for the Bureau of Reclamation in Klamath Falls, Oregon.



Lynn Scarlett
Managing Director, Public Policy
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BIGGER MAY SOMETIMES BE BETTER

BY LYNN SCARLETT

In December, over 190 nations committed to reducing greenhouse gas emissions. These commitments mean new development — of wind, solar, and other energy infrastructure. In the United States, some project wind energy climbing from 4 percent of electric power to 20 percent by 2030. Alongside energy infrastructure, we see burgeoning cities stretching out into the countryside, and new roads to accommodate more people. These trends reflect economic opportunities — and

they respond to the needs of communities. But they also mean land transformation that can fragment wildlife habitat, disrupt water flows, and put species at risk.

As these pressures continue, Habitat Conservation Plans approved by the Fish and Wildlife Service and National Marine Fisheries Service, consistent with the goals of the Endangered Species Act, provide an important vehicle to achieve conservation. These plans set forth how impacts to species listed under the ESA will be avoided, minimized, or offset, while providing a pathway for needed development. Yet effective use of these plans requires some recalibration. Beyond the pace of infrastructure, we see other challenges that unfold at large scales. Vegetative fuel build-up in forests, water quality problems, the many effects of climate change, and the spread of invasive species present interconnected impacts across large landscapes.

The nature of these challenges suggests a need for conservation planning and management regimes at an ecosystem scale. And they point to a need for a multi-species focus to optimize management actions in striving to implement provisions of the ESA.

By 2012, the FWS had approved 710 plans covering over 40 million acres and hundreds of species. Many of these plans focus on a single species on land parcels of less than 100 acres. Just 5 percent of HCPs apply to areas of 100,000 acres or larger. But some pioneering efforts are underway.

The American Wind Energy Association has proposed a Midwest Wind Multi-Species HCP expected to cover some 33,000 megawatts of new power — over 100 new industrial wind farms — and address requirements to mitigate impacts of 13,000 MW of existing wind generation. The agreement involves eight states and eight listed species and would cover impacts from construction through decommissioning.

The natural world is characterized by interconnections, synergies, and interdependence. Species often function interdependently across landscapes and ecosystems. Addressing these issues requires combined public and private actions across jurisdictions and land ownership boundaries. These challenges put a premium on developing tools for cross-jurisdictional, public-private, and private-private coordination and cooperation.

Thus, development of HCPs at large scales is encouraging. And some of these new-style HCPs are anticipatory in nature — that is, their focus goes beyond legal requirements, and they cover non-listed species.

Consider the city of Seattle, which prepared a plan for 83 species (7 listed and 76 unlisted) that addresses a variety of natural resource issues across a 90,545-acre watershed and includes the city's water supply. The plan involved negotiations among five state and federal agencies to integrate and coordinate issues and conservation responses, such as maintenance of instream flows and fish passage.

Also in the Northwest, Plum Creek Timber Company entered into an HCP agreement for 1.6 million acres in Montana, Idaho, and Washington and covering 17 species of native fish, of which eight are listed as threatened or endangered.

In one especially ambitious effort, the FWS approved a plan with NiSource, a large natural gas company, that covers 10 federally listed species along over 15,000 miles of NiSource right-of-way in an area spanning 14 eastern and central states on 9

million acres of land. Development of the plan involved multiple federal agencies in a coordinated process. The approach exemplifies large-landscape cooperative conservation.

These HCPs help align development plans with the scope and integration of analyses and actions needed to improve conservation results. But challenges in assuring their quality and implementation remain. HCP development is often burdensome and time-consuming; performance requirements are sometimes built upon inadequate information and emphasize management prescriptions rather than performance-based outcomes. And accessing multidimensional information at relevant scales is a work in progress.

Moreover, many HCPs do not yet consider climate change and its effects on wildlife. Incorporating adaptive management approaches into HCPs could help those implementing plans incorporate new information and revised threat assessments.

Despite these challenges, the emergence of large-scale HCPs holds promise for applying a conservation lens more consistent with perceiving and addressing interdependencies and ecosystem health. These efforts also have potential to enhance collaborative conservation partnerships, shifting species protection dynamics away from zero-sum debates toward results that protect species, secure healthy lands and waters, and sustain economic opportunity. Therein resides their greatest promise.

Lynn Scarlett is managing director, public policy, at The Nature Conservancy and served as deputy secretary of the interior.

MAPPING TECH KEY TO DATA APPS THAT BUST SILOS

BY JAMES R. STRITTHOLT

Effective HCPs rely on highquality conservation science and rapidly evolving mapping technologies. Advances in both fields have reached a point of potentially transforming how HCPs are developed and implemented at any spatial extent.

Government, academia, and conservation NGOs have led the way in creating and maintaining the most relevant spatial data and information needed for HCPs, but traditional social and political norms have resulted in tremendous barriers to making the best of what we know about species and natural communities and have frequently made meaningful stakeholder participation in the process extremely difficult.

Four major problems have plagued efficient and effective use of these resources, including the lack of data access; a means for easy data integration; an easy-to-use mapping system; and little support for collaboration. The cost of trying to address these fundamental deficiencies has seriously burdened the HCP process in terms of time and money and has often resulted in plans that are ineffective or difficult to implement.

Data Basin (www.databasin.org) is an online conservation data-sharing and collaboration platform that was developed by the Conservation Biology Institute



James R. Stritholt
President and Executive Director
Conservation Biology Institute

to address the four major barriers. Data Basin was built to deliver high-quality conservation science to technical and non-technical users alike using maps as the primary currency. Users connect to Data Basin using any of the popular web browsers (no installing of expensive software) for immediate access to over 20,000 spatial datasets and growing.

Users can explore and easily integrate the datasets they find there (even add in their own data if they wish) to create, customize, save, and share their maps. Users are provided with their own private workspace, where they can save all of their content, and they are given total control over how they choose to share their work with others. Private or public working groups can be created and managed by users to allow collaborators to focus on a particular issue, solve a problem, or negotiate an agreement.

Over the last few years, Data Basin has been used to support the creation of HCPs — the most noteworthy being the Desert Renewable Energy Conservation Plan in southern California, or DRECP. This effort included the creation of a customized Data Basin gateway focused on this geography and resulted in the aggregation of nearly a thousand spatial datasets from dozens of sources and numerous, sophisticated spatial models.

Special tools were built to provide maximum transparency of the analytical work while the content was organized in logical ways to help users easily locate and use it. Thousands of stakeholders were given unprecedented access to the inputs to the plan and were provided the means to understand the science behind the planning process.

Plan alternatives were presented to stakeholders via the web resulting in the ability to dynamically explore the findings rather than solely relying on small paper maps. Review tools allowed users to comment on the maps to ask questions, raise objections, or suggest alternative solutions. User comments were then exported in a standard format and easily attached to comment letters. This advancement resulted in much clearer and useful comments and, since they were standardized, made it much easier for the responding agencies to process them.

As transformative as this has been for the DRECP, it is still not enough. There are two other areas that take full advantage of the Data Basin platform.

The first is the need for specialized applications that help interpret the science, especially as it pertains to some of the more complex problems that impact HCPs, such as climate change. Users need complex topics presented in an easy-to-use application that allows flexible interaction with the content, yielding meaningful, actionable results (for example, California Climate Console (www.climateconsole.org/ca)). Another application is currently under development to identify least-conflict lands for renewable energy development throughout California and another one to support mitigation decisions once development has been approved.

The second area is developing tools that allow for easy monitoring of key plan indicators, management actions, and routine updating of data and information to support adaptive management. For example, tools are being built within the Data Basin framework that allow for the incorporation of data through routine field surveys collected by ground crews as well as data from instrumentation from various types of sensors; these include water quality sensors and acoustic sensors



Martin Wachs
Distinguished Professor, Emeritus
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for bats and birds. Keeping the data and information up-to-date is critical to a successful HCP, and having a durable system to house it all is fundamental.

Without disrupting existing datamanaging institutions and the HCP process, Data Basin and its various applications have found a way to bust the silos and provide all HCP participants with access to high-quality science, transparency, inclusive participation, integration of data and ideas, interpretation of important concepts, and the means to actively support adaptive management — all in a costeffective manner.

James R. Strittholt is president and executive director of the Conservation Biology Institute.

IT'S ALL ABOUT FINDING THE MONEY

BY MARTIN WACHS

Large-scale ecological protection is costly. Some of the greatest costs come early — those of Habitat Conservation Plan formation, reaching agreements that result in take permits, and acquiring large tracts of land. HCPs covering millions of acres need tens of millions of dollars to support their formation and hundreds of millions more to buy land. The substantial benefits justify these costs but come much later. And, assistance from Endangered Species Act Section 6 grants and similar funding from state programs is becoming harder to get because of stiff competition for fewer dollars.

To find needed front-end funding, HCP planners must partner with agencies and developers whom they once considered to be their opposition. Private land developers and public infrastructure agencies increasingly realize that long-range conservation plans produce substantial savings by enabling commercial developments and infrastructure to be built earlier at lower cost and with fewer legal challenges than when each road, bridge, power plant, or condo complex meets its mitigation obligations in piecemeal fashion. This new attitude can lead to partnerships that facilitate development while protecting species.

An important source of local funding is impact fees levied on land development of residential, commercial, and industrial projects. Fees are collected when building permits are issued for new development. The Riverside County, California, HCP authority, for example, obtains about two-thirds of its revenue from development fees. Clark County, Nevada, charges impact fees on all new development even where it does not directly impinge upon sensitive habitats.

Impact fees suffer from a systematic shortcoming, however. When the economy expands and new development is booming, revenue from impact fees rises but so does the price of land needed to implement the HCPs. During recessions, when development slows, land prices drop and HCP agencies can buy it at lower cost. But, when development slows, so does the flow of impact fee revenue used to buy land. Few sources are available for bridge funding, which would allow HCPs to borrow money for land purchases from willing sellers during economic downturns when prices are low, to be later repaid with interest when the economy improves and revenues from development fees rise.

Establishing low-interest revolving loan funds dedicated to species conservation also would increase infrastructure agencies' access to funding for HCPs. This could

be done under the auspices of state infrastructure banks or through financing by the federal Transportation Infrastructure Finance and Innovation Act. HCPs can also access wetlands conservation loans from a fund established under the Clean Water Act. Establishment of a revolving loan fund dedicated to species protection, perhaps under the ESA, would provide greater access to lowinterest loans for HCPs pursuing efficient, lower-cost land acquisition strategies, and would be especially valuable when development slows.

It is usually necessary for HCPs to piece together funding from disparate sources. Consolidating funding from state and federal programs to enable regional advanced mitigation planning would, for example, be helpful to HCPs and to infrastructure providers. The creation of stateand federal-level conservation clearinghouses might provide one avenue to available grant money, facilitating larger-scale conservation projects and programs while reducing administrative costs to local applicants.

A start on this was made by the still fragile Conserve Florida Water Clearinghouse, a collaboration of the state Department of Environmental Protection and Regional Water Management Districts, created by state legislation to unify water conservation efforts. New York and Washington are state models in this area.

To benefit, HCPs have to work with agencies that build and operate infrastructure and with businesses that develop private land and who in the past have been their adversaries.

Environmental interest groups traditionally opposed ballot measures to finance infrastructure, but recently their support has been instrumental in achieving voter approval of measures that finance infrastructure while also providing funding for HCPs. In California, Orange County's Measure M2 allowed the county to acquire land ripe for development that now will mitigate future construction of roads named in the measure. And San Diego County's TRANSNET sales tax, which will provide over \$14 billion for transportation improvement projects, incorporates \$650 million in mitigation measures, featuring HCP land acquisition.

Including HCP land acquisition in the TRANSNET sales tax also garnered support for the ballot measure from environmental advocacy groups. This was a notable reversal since environmentalists had traditionally opposed tax measures to fund transportation projects which they believed harmed the natural environment. Changes like these are leading the way forward.

Martin Wachs is distinguished professor emeritus of city and regional planning and civil and environmental engineering at the University of California, former chairman of the Department of Urban Planning at UCLA, and former director of the University of California Transportation Center.



Douglas P. Wheeler
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IT AIN'T BROKE BUT IT SHOULD BE FIXED

BY DOUGLAS P. WHEELER

When administrators of multiple-species Habitat Conservation Plans from around the country met last November to compare experiences and identify obstacles to success, they were the embodiment of remarkable progress in effective use of a once-dormant conservation strategy.

An amendment of the Endangered Species Act, Section 10 authorizes the issuance of "incidental take" permits, but only on condition that applicants prepare a comprehensive HCP to mitigate the adverse effects of otherwise lawful development. Very few ITPs were written until the adoption by Secretary Bruce Babbitt of a "no surprises" policy.

This incentive, which offers binding assurance that an HCP — once written and approved — would suffice to meet the anticipated needs of covered species and their habitats, has had the desired effect. Today, more than 700 HCPs are in place, and, when written to meet the needs of multiple species over a large area, they are a means to achieve species protection while accommodating needed development.

Multi-state HCPs are now in preparation, and the federal government itself — in cooperation with affected states and stakeholders — has embraced multi-state HCPs to resolve otherwise intractable resource conflicts in places like the California Desert and the San Francisco Bay-Delta estuary.

As conferees observed in November, however, this expansive use of HCPs and multi-state HCPs has come at a price. Paradoxically, as plans have become more far-reaching and comprehensive, they have become more costly, time consuming, and controversial.

Today's practitioners have learned to discount assurances in the original HCP Handbook, now 20 years old, that the process is streamlined, flexible, and transparent. They can recount contemporary instances in which plans have languished for years pending approval by multiple levels of authority in several agencies and accumulating costs in the millions. What, then, can be done to correct these defects and restore confidence in this indispensable planning tool? Among participants at the meeting in November, there were at least these three suggestions: to the extent possible, integrate ESA permitting requirements with those of other statutes; delegate to the states increased responsibility for implementation of endangered species programs; and provide federal financial assistance in the form of loans and loan guarantees for habitat acquisition.

Section 10 was not enacted to provide one-stop shopping for resource-related federal permits, or even to include entire ecosystems. But as the scope of multi-state HCP planning has been expanded to include entire watersheds and ecosystems, it has become apparent that integration of permitting processes is not only desirable to reduce regulatory burdens, but necessary in the case of overlapping responsibilities for the same resource.

The National Environmental Policy Act would appear to require this approach, in any event, as it encourages the coordinated preparation of Environmental

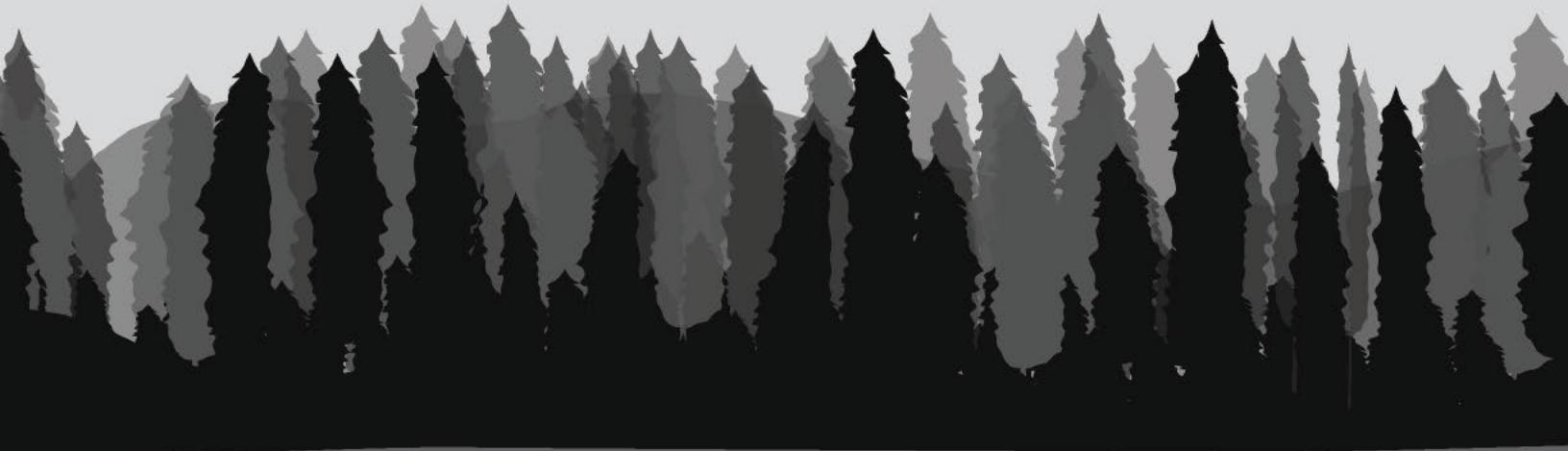
Impact Statements. For instance, while the Corps of Engineers' Special Area Management Plans may have served the corps's planning purposes, they did not lead to integration of planning requirements for endangered species, or the coordinated issuance of Clean Water Act Section 404 and ESA Section 10 permits.

More recently, however, the Sacramento District of the corps has proposed to fully integrate its Section 404 responsibility with the South Sacramento Habitat Conservation Plan, eliminating the need for project-by-project ESA Section 7 consultations. In addition, through reliance on the South Sacramento HCP, the corps would achieve programmatic compliance with Section 7, CWA Section 401, and Section 106 of the National Historic Preservation Act.

ESA Section 6 requires that the secretaries of the interior and commerce "shall cooperate to the maximum extent possible" with the states, and provides specific authority for cooperative agreements with states that maintain "an adequate and active program for the conservation of endangered species and threatened species." Though such agreements exist, they are largely the vehicle through which the secretaries provide modest financial support for state programs. At a time when their own resources are constrained, the Fish and Wildlife Service and National Marine Fisheries Service should be encouraged to delegate responsibility for administration of the ESA to states, like California, which have robust programs of their own.

Western Riverside County Regional Conservation Authority, sponsor of an ambitious 146-species HCP, has argued successfully for inclusion in the Water Infrastructure Finance and Innovation Program of authority to use infrastructure loans and loan guarantees for the acquisition of HCP habitat. It has proposed a similar provision for inclusion in the program for support of transportation infrastructure under the Transportation Infrastructure Finance and Innovation Act and stand-alone legislation that would make such assistance available to sponsors of HCPs, whether or not associated with a particular infrastructure project.

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Center for Collaboration-in-Governance | Environmental Law Institute

The Future of Wildlife Habitat Conservation Planning

Dialogue Session: June 13, 2018

ELI Offices, 1730 M Street NW, Suite 700, Washington DC

An Invitational Dialogue Session on

**MULTIPLE AGENCY/INTEREST COLLABORATION AND FUNDING AND FINANCING
REGARDING**

LANDSCAPE-LEVEL CONSERVATION IN ANTICIPATION OF GROWTH

PRELIMINARY DRAFT

DIALOGUE SESSION OUTLINE

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BACKGROUND

This invitational Dialogue Session, will be hosted by the Center for Collaboration in Governance (“CCG”), the Environmental Law Institute (“ELI”) and the University of California Law School, Center for Land, Environment and Natural Resources (“CLEANR”) in the ELI Offices in Washington, D.C. on June 13, 2018:

the seventh/ final dialogue session focused nationally on the Future of Wildlife Habitat Conservation Planning;
following the Interim Report published at the end of 2016 (CCG Report), attached below; and,
anticipating the publication of a book that summarizes what we have learned.

The Dialogue addresses critical issues facing the Nation regarding the conservation of wildlife habitat in the face of significant anticipated growth in population (nationally and world wide), related infrastructure and development and changes in our climate. We have come to appreciate that the development of our information technology has allowed us to act across and transcend the boundaries of our silo like public and private institutions, calling out for increased and improved *collaboration* among involved agencies and interests.

In particular, the Dialogue has addressed the need for early landscape level conservation in anticipation of development and, in turn, the need for increased collaboration at the local, State and national levels to craft the necessary programs/plans/strategies to best provide for such development, as well for the anticipatory conservation of eco systems at the landscape level. And, has pointed out the need for a significant increase in available funding for planning and the implementation of plans created. Finally, it has acknowledged the need to further explore in greater detail how and by whom such conservation planning and implementation should be funded. And, has raised questions as to how a multitude of "silo like" agencies and interests (at the local, regional, State or national levels), can come together and collaborate, in efficiently constructing, approving and implementing plans that would be effective and fair in allocating the burden of such a prescient approach.

The CCG Report has been helpful in providing a beginning overview, while acknowledging that further more detailed thought is required. It also acknowledged that it was not only necessary to articulate a technically feasible approach, but, also, to find a way for the broader constituency of agencies and interests to collaboratively "join in" to implement the emerging vision. It called for dialogue and a broader understanding among the agencies and interests involved. Two key issues or approaches involve the questions of "who" pays and "how," and then how do we bring together the affected constituency of agencies and interests into a coherent effort reflected in the required "plans". And so, CCG and ELI undertook to convene several additional dialogue sessions to explore these issues: first, the funding and financing of wildlife habitat conservation in anticipation of growth and development, and, second, the question of how we can further collaboration among the agencies and interests who need to be at the table (local, regional, national, etc.). The June 13th session will be the last session – to be followed by a book that captures what we have learned and approaches going forward.

To this point, we have worked openly across historic lines – that divided us, for example, development and conservation interests. Our dialogue has transcended those divisions. It is commonly acknowledged that early conservation makes both conservation and economic sense (requiring less time and money for development permitting and providing more thoughtful and

effective conservation). It also provides greater flexibility in reconciling conflicts – again, minimizing adverse economic impacts and promoting better outcomes, calling as well for early funding, as well as collaboration.

JUNE 13, 2018 SESSION

This session follows the earlier January 18th Dialogue Session and outcomes:

- *Agreement on the need for broad-scale collaboration: public agencies and private interests -- local/state/national; not to be confused with conflict-resolution.*
- *Recognition of Habitat Conservation Plans as early models of such collaboration, extending now to broader concerns, such as resilience.*
- *Significant economic advantages to advance landscape-level conservation in anticipation of infrastructure and other development (See Brief by Charles Laundry on the Western Riverside MSHCP).*
- *Key question: how do we fund and finance such advance conservation. Need to identify arrangements for collaborative funding by public and private sources? Perhaps in collaboration with CF, TNC, EDF and NFWF, and private sector investment interests. E.g. Pecos River effort (Culhane, Occidental and the role of NFWF); Chesapeake Bay (Wheeler) and the Everglades.*
- *A National focus on infrastructure and wildlife (mentioned by Willms, WGA) and reference to NEPA efficiency effort.*
- *Need to include in the dialogue, e.g., ULI and AASHTO and other development representatives, as well as private sector investors.*
- *Regional processes were mentioned (Grossman comments, Ca. OP&R, California Sustainability Council) and the concept of Regional Conservation Investment Strategies.*
- *Need for a Book or Major Report (that is already in process). The outline of chapters will be discussed in the up-coming session.*

The June 13th dialogue session will be hosted in the ELI headquarters in Washington, D.C. and will address the questions of funding, financing and collaboration.¹ The hope is that we can further explore this approach in sufficient detail to encourage and support further models and pilot efforts, including sources of funding that are necessary to see them succeed.

A number of “briefs” (1 2 page papers) will be provided, including those from prior sessions, regarding specific approaches and efforts. Finally, as with our last session in January, several “call ins” are being scheduled with experts and practitioners.

(Preliminary/Proposed) JUNE SESSION AGENDA

9:30 – 9:45 (EDST): *Welcome and Introductions.*

9:45 – 11:15 Focus: Inter agency *Coordination and Collaboration: Brief Updates and Synthesis* (to be invited):

- Wheeler/Marsh: California HCPs, DRECP and Bay Delta.
- Soloman, USDOT/USFWS: Eco logical Program
- Boling, Federal Fast 41 Dashboard Programs.
- NFWF/Myles: Pecos River Watershed Collaboration.
- Wheeler: Chesapeake Bay
- Olson (USACOE): SAMPs; relationship to HCPs.
- Draper, Florida
- Willms/Lyons: the Plains (the Sage Grouse plans, etc.)
- Marsh: Mojave

11:15 – 11:25: Break.

11:25 – 12:30: Focus: **Funding (sources, phasing, investments) . Brief Updates and Synthesis (Invited):**

- TNC, EDF, CF, Conservation Investment Group, National HCP Coalition.
- Grossman/Bailey: Update, California Regional Conservation Investment Strategies.

¹ Participation is by invitation, approximately 20 participants are anticipated at the table, including representatives of federal and state agencies, nongovernmental organizations and infrastructure and development interests as well as academicians, attorneys and planners.

- Wachs, Lederman: Funding of Wildlife Conservation re Transportation (e.g., California, Texas and Florida); and, applicability to other programs.
- Draper: History of Florida State/federal funding of Wildlife Conservation in Florida (e.g., the “CERP”).

12:30 1:00: Lunch.

1:00 1:30: Call in: Bodane, WGA: Update/brief discussion of WGA efforts. Discussion: relationship to Dialogue.

1:30 3:30: Discussion and Review of Preliminary Book Outline Substance and Coverage (see draft outline below).

3:30 p.m. Adjourn

ADVANCE PAPERS (“BRIEFS”)

In preparation for the May dialogue session, participants are invited to draft, in advance of the session, very short (one to two page) briefs on specific topics – in large part: potential models or experiences of what has been tried and what appears to work or not work, or what we might expect in the future. They will inform the dialogue. This list will be revised to include additional briefs, which will be requested or offered.

Past Briefs, include:

- 1.) David Olson (USACE), *Aligning Special Area Management Plans, Clean Water Act Section 404 and Habitat Conservation Plans.*
- 2.) Jaimee Lederman, Martin Wachs (UCLA), and Gian-Claudia Sciera (UT), all Ph.,D.s, based in part on the Brief by Charles Landry (Western Riverside MSHCP), *Economic Efficiency of HCPS.*
- 3.) Gerry Solomon and Paul Heberling (USDOT), *Coordination of Transportation and Wildlife Conservation*
- 4.) Douglas Wheeler, Esq. (Hogan, Lovells), *Funding of Chesapeake Bay Conservation Efforts.*
- 5.) Myles Culhane (Occidental Petroleum), *Pacos River Valley Conservation Effort.*

Requested (a partial beginning list):

- 6.) Keith Greer (SANDAG), *SANDAG Advance Mitigation Program and Proposed Improvements.*
- 7.) Tomer Hasson (TNC) *Advance Landscape-level Mitigation Programs.*

Past remote “Call-ins”:

- 8.) Jim Murley (Miami-Dade Resiliency Officer)., Collaborative Conservation/Water/Resiliency Planning and Funding in South Florida (***Everglades, South Florida***).
- 9.) David Willms (WGA): ***Perspectives From the WGA Effort***.
- 10.) Dennis Grossman (COPR), ***AB 2087: Regional Conservation Considerations and Funding***.

Additional remote “Call-ins” to be added.

Broad Picture of the Dialogue:

1. ***Information Technology.*** The Dialogue has provided significant learning. For example, we can better understand that “information technology” has caused our public and private sector “silo like” institutional walls (both public and private) to become more permeable and our institutions less isolated or “silo like” (e.g., reflecting interaction among topics and concerns previously addressed separately, such as, e.g., energy, water, urbanization, transportation and wildlife conservation – technology that makes communications and broader systemic programs and strategies possible. As a result, Information sharing and coordinated and collaborative decision making and implementation are becoming increasingly commonplace. However, this is a relatively new way of working. We need to better understand and implement the principals and practices of “***collaboration***”. This is the focus of the Dialogue.
2. ***Collaboration.*** HCPs are an early example of ***collaboration*** that followed the environmental revolution that was picking up steam in the late 1960’s and early 1970’s at the local, State and national levels. Following WWII there was an increased focus on transportation (e.g., the National Highway System), Water (e.g. the California Water Plan), oceans (e.g., the Stratton Commission Report (“Our Nation and the Sea”, the “Law of the Sea Conference”, the Sea Grant Program and the Public Land Law Review Commission Report (“One Third of the Nation’s Land”), urban planning (e.g., general plans., urban planning grants, “New Towns”), coastal areas (CZMA) and special area management plans (SAMPs); Special Areas: E.g., the coastal areas, Lake Tahoe, Everglades, the Chesapeake and Florida Keys, the New Jersey Meadowlands and the Pine Barrens) State and National Environmental Planning and Regulation (NEPA, CEQA, CAA, CWA, ESA, CERCLA, Florida Land and Water Acts (e.g., concepts such as “Areas of Statewide Concern”: the Florida Keys and Everglades), Public Lands Law Review Commission and Stratton Commission on the Oceans (which involve

significant water, wildlife, natural resources and other systems and interests. (See, the Brief regarding the Chesapeake Bay).

3. ***Federal Agency Coordination.*** Another approach regarding coordination, and, to some degree, collaboration, has focused on inter agency efforts that has been characterized as ***alignment*** of, e.g., ACOE planning (SAMPs), and HCPs and coordination in environmental compliance (e.g., ***the Eco-Logical program*** focused on wildlife (USFWS) and transportation (USDOT); and more recently in the federal Fast/41 Dashboard Program (See the briefs regarding these approaches).
4. ***HCP concept as harbinger of more broad-scale collaboration.*** HCPs, some suggest, were harbingers of much broader collaborations, such as “resiliency” efforts now underway, e.g., in the Miami Dade sub region, focused on changes in weather patterns, water levels and tides. In anticipation of other efforts, such as those regarding the need to address transportation, housing and infrastructure, together, in light of concerns regarding population growth, increasing scarcities of food, drinking water, transportation congestion, and shared air quality concerns – not just locally or at a State level but at a national and international level.
5. ***NEPA/CEQA Efforts.*** Programs, e.g., efforts such as NEPA processes (and CEQA in California) provide a broader agency/interest “picture” of environmental concerns and impacts. They also provide the underpinnings for scoping processes, which can be vehicles for collaboration if properly constituted..
6. ***The allocation of the burdens in collaboratively addressing these concerns is a key task.*** Our legislative and administrative systems are “silo like”, as well, and often address concerns in an un coordinated manner. Consider the collaborative planning, administrative arrangements and funding of various phases of area wide HCPs, such as the 1.2 million acre Western Riverside MSHCP or the 22 million acre California Desert Conservation Plan. See the Brief prepared by Charles Landry, of the Western Riverside Resource Conservation Authority.
7. ***Phases of Landscape-conservation Planning.*** In thinking about the funding of conservation, it is important to look at the phases involved (the funding sources for each may be different). For example, varying funding sources may include the following:

- ***Phase 1: Area-wide eco-system characterization*** (e.g., identification of: habitat of the ecological community, “cores”, “linkages” and species of special concern, including “narrow endemic species”) and the identification of areas for conservation. (See, Grossman, Brief re CA A.B. 2087 (2017) and HCPs generally, including the Western Riverside MSHCP.)
- ***Phase 2: Collaborative/HCP-like planning arrangements.***
- ***Phase 3: Provision of public lands and acquisition of private lands*** to be conserved.
- ***Phase 4: Coordinated management of conserved lands.***

Each phase may call for a different caste of agencies and interests and different sources of funding, each posing different questions regarding who should bear the burden of the particular effort. In this regard, consider the different agencies or interests that may be involved:

Lands Affected (e.g.):

- Federal lands: BLM, USFWS, BuRec, Forest Service, DoD, Nat. Monument lands
- Waters: State, Federal (including BLM, NOAA, USACOE, EPA, USFWS)
- Tribal lands: reservation and treaty lands
- State lands: tide and submerged lands, park lands, waterways, lands granted upon joining the Union
- Private lands: (including checkerboard/intermingled lands)

Development likely to generate demand for habitat conservation at a landscape level. Varying proposed uses and concerns with respect to differing lands may well bring to the table differing agencies and interests. For example, consider the following uses and concerns.

- Public infrastructure (transportation, water, energy, waste, etc.)
- Pipelines/Transmission ROWs
- Energy Development (mining, oil and gas, renewables)
- Urban/suburban development
- Military
- Coastal defense/resilience
- Other (e.g., agriculture, ranching, and timber)

Funding Sources.

- Development (taxes, exactions, and mitigation fees)
- Local taxes and assessments (sales and real estate parcel taxes)
- Advance State and Federal funding, perhaps bond funding (Florida) or federal loan guarantees (e.g., HUD New Towns) or grants: (UDAG; Section 6) re conservation and community development; or, WIFIA or TIFIA loans for water or transportation infrastructure
- Ongoing, incidental fees and charges: tax increment financing; covenants running with the land; parcel taxes
- Conservation Agreements, easements, tax transfers, transfer of development rights etc.
- Transportation, water, energy fees
- Resilience funding
- Mitigation.

Beginning Questions/Suggested Premises

What we have learned:

If it is more economically efficient, and more conservation effective, to conserve wildlife habitat and develop advance compensatory mitigation, at a landscape level, in advance of growth and development. It is suggested that we should work to find a way to do this.

- Satisfy applicable local, State and federal regulations in one swoop.
- Identify significant funding to secure this conservation up front and provide for “compensatory mitigation” to repay the costs of up front conservation and processing.
- To accomplish this will require major collaboration from the outset.
- And, it will not be easy.

However, it can be done. For example,

- At the outset conservation and development interests and public agencies would need to agree to collaborate. To find a common way forward to provide advance mitigation. “Collaboration” is more than simply co ordination, it is best when it rests on several key principles, including respectfulness, truthfulness, good will, empathy, and civility.
- It also requires “leadership”, not that dictates the results, but assists those involved to work collaboratively. Perhaps, the President’s Council on Environmental Quality could lead in the development of a national program that embraces this concept. It might include an effort similar to the Federal Lands Law Review Commission study of the late 1960’s.
- Perhaps a series of pilot or model programs could be identified and pursued, perhaps being addressed in a manner similar to, or as ancillary to, the Federal Fast 41 Dashboard Program. Some are already in process.

A First Question: How are the lands to be conserved identified? By whom?

What would a national program look like to identify and provide for conservation in anticipation of growth and development? The approach might vary depending on distinct areas within the Nation (e.g., a beginning partial list might include, e.g.: timberlands; agricultural lands; national forests (and other forested lands to be conserved for that purpose); urban centers; transportation/energy/water related lands and corridors; forests and parks; natural lands.

Clearly, the idea of a national “zoning” effort is from the outset extremely contentious and, likely, unworkable. But, perhaps, there are approaches that would allow areas to be addressed from this perspective. E.g., the 22 million acre California DRECP was intended to distinguish among lands in the California Desert to be developed, conserved, grazed, or used for military purposes or energy production, mining, transportation or recreational purposes. Perhaps there are other areas that can be designated and addressed in the manner of the DRECP or in a manner similar to the BLM Land Use Plans. And further appreciating that our system of land use governance reflects the complex system focused on a division of governance among local, State and National authorities and tribes. Perhaps, the HCP model can then be utilized to create flexible arrangements among the various levels of agencies and interests involved.

Are the South Florida, Chesapeake, Mojave Desert, Texas Hill country and the various HCPs along those lines.

Could we use the same approach to address other concerns such as energy, water, transportation and urban development on an “area wide” basis? It appears that the California A.B. 2087 provisions for the development of “investment strategies” are in this direction.

The paragraphs above express the complexity of the challenge. And yet, arguably, the most cost effective approach would be to provide for systemic funding to acquire conservation lands in advance to be repaid from infrastructure and other development.

A related and, perhaps, prior question is how would we identify the lands to be conserved?

How do we convene the right constituencies of public and private agencies and interests to collaborate to address questions such as which lands are to be conserved and managed and what are the sources of funding? It is suggested that the HCP model: collaborative scoping, conservation plan, implementation agreement and funding, could provide a point of departure.

A Second Question: Underlying the questions of “which lands” and “who funds” is a key question of how we provide the quality of *collaboration* necessary to effectively explore these questions? As we suggested above, our information technology has not only supported but has encouraged us to be more efficient through communication, cooperation and, in complex decision making circumstances, collaboration. It is suggested that this is one of the circumstances.

[More questions to come]

BOOK OUTLINE (to be included in discussion outline)

Draft: April 26, 2018

Book/Major Report: “*Advance Landscape-level Wildlife Habitat in Anticipation of Development*” to be published by ELI (possibly in collaboration with others). The outline will be shared for comment at the next session of the Dialogue on June 13, 2018. Topics and authors are proposed, subject to acceptance revision.

- **Introduction and Overview: Collaboration in Governance and Funding in addressing Wildlife Habitat Conservation in anticipation of Infrastructure and Other Development.** (Marsh, Wheeler, Scarlett, Bean)
- **Recent History: Wildlife Habitat Conservation in the United States.** (Bean, Zippin, Korte, Li)

Possible Case Studies:

- **Delaware River Watershed and Chesapeake Bay;** Florida: the Everglades and South Florida: (Draper/Murley).
- **California:** HCPs, NCCPs, Lake Tahoe, Bay/Delta, DRECP, and the Coast: (Marsh, Wheeler,)
- **Texas:** the Hill Country, Edwards Aquifer: (Sciara, Lederman, ____)
- **The Plains:** Montana, Idaho, Wyoming, Colorado, Nevada, Arizona: (Lyons, Quarles, ____)
- **The North Coast:** Washington and Oregon: (Kraft?)
- **The Colorado River:** ()

- **The Role and Function of Information Technology:** (Stritholt, ESRI)
- **Funding and Financing:** (Wachs, Lieberman, Sciara and other familiar with financing)
- **Governance:** (Marsh, Wheeler, Comacho, Korte)

- ***Moving Forward:*** (*Marsh, Wheeler, Scarlett*)

To: Skipwith, Aurelia[aurelia_skipwith@ios.doi.gov]
Cc: Mennel, John (US - Arlington)[jmennel@deloitte.com]; Gracie, Matthew (US - McLean)[magracie@deloitte.com]; Brian Kelly[bkelly@bkstrategies.com]
From: Cassidy, John Kenneth (US - Arlington)
Sent: 2018-05-18T10:17:19-04:00
Importance: Normal
Subject: [EXTERNAL] Reg Explorer Follow-up for FWS
Received: 2018-05-18T10:17:34-04:00
Smart Reg Placemat.pptx
DOI FWS Reg Explorer ExecSum 051818.docx

Hi Aurelia good to see you earlier this week and thank you for the time to show you the Reg tool. As you requested, we're following-up with some additional information on how it could be used at FWS. Attached are two documents the first is a general overview/placemat of the tool; the second is a one-page summary of how we think it could be useful to you and your colleagues at FWS, including the ongoing work related to ESA.

I didn't include any level-of-effort or budget information in these documents, but happy to have that conversation with you as a follow-up and to make any adjustments to the one-page document, as needed.

Have a great weekend and looking forward to being in touch soon.

Regards,
John

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v.E.1

Deloitte. Smart Regulation

As the Administration advances its regulatory reform efforts, agencies are facing an unprecedented need to reduce their regulatory burdens.

Deloitte's Smart Regulation approach combines subject matter experience with neural network analysis of Code of Federal Regulation (CFR), state regulation, and sub regulatory guidance text to accelerate progress of burden reduction and meaningful reform.

Deloitte's Smart Regulation approach can help an agency at each stage of its regulatory reform journey

Quick Wins

Identify regulations that are redundant, conflicting, or out of date

- Conduct qualitative and quantitative research to better understand how stakeholders experience regulations
- Use RegXplorer insights to identify potential sections for streamlining or elimination (i.e., regulations that may be out of date, conflicting, redundant, or have "broken" citation structures)

Burden Reduction

Identify and prioritize regulations that present opportunities to reduce burden

- Use RegXplorer findings to identify and analyze regulations and guidance that relate to a specific burden issue
- Integrate contextual materials, such as public comments or Paperwork Reduction Act data, into RegXplorer database to expand insights
- Develop financial models that project burden reduction opportunities. Integrate cost findings with qualitative stakeholder research to inform reform priorities.

Deloitte's RegXplorer Tool

Accelerate Insight Driven Regulatory Reform

RegXplorer uses cutting edge artificial intelligence technology to digest, analyze, and understand links among inter agency and intra agency regulations and sub regulatory guidance, allowing agencies to discover opportunities to accelerate and streamline regulatory reform and burden reduction efforts



Text analytics enables instant evaluation of agency's current internal regulatory profile:

of sections

years average age of sections

#% sections have dependencies

Key RegXplorer Capabilities:



Summary Statistics

Provides regulatory profile on number and age of regulations



Identification of Similar Regs

Finds and clusters regulatory text by the topic and meaning of the section



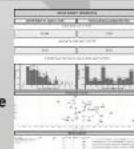
Dependency Structure

Identifies and visualizes citations across sections to understand relationships between target sections



Customization by Agency

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Using advanced analytics to drive regulatory reform



How to implement President Trump's "One in, Two Out" Regulation Initiative



Re-thinking Red Tape
Influencing behaviors to achieve public outcomes



Compliance without Tears
Improving the government-to-business experience

Contact Us:

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magracie@deloitte.com

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Notes Summary:

No speaker notes are contained in this presentation.

Information on Deloitte's Regulatory Explorer Tool for Consideration

Determining which regulatory provisions to streamline, remove, or revise in the Code of Federal Regulations (CFR) and in other, relevant sub-regulatory guidance can be a difficult task, especially when considering the Department of the Interior's entire, complex regulatory stock related to safety and environmental enforcement.

Deloitte offers an innovation to address this challenge through rigorous regulatory analysis. Our approach combines advanced artificial intelligence with subject matter experts to quickly identify regulatory reform opportunities.

Specifically, Deloitte's Regulatory Explorer tool uses cutting-edge data analytics algorithms, text analytics, and artificial intelligence to boost analytical power needed to find patterns and burden reduction opportunities relevant to the United States Fish and Wildlife Service (FWS) mission.

We understand FWS has several regulatory use cases they wish to explore including, for example, analysis of regulations relative to endangered species.

Regulatory Explorer is designed to "explore the regulation". It works best when FWS subject matter experts work alongside Deloitte's Regulatory Explorer team to search, filter, way-find and scenario test across the corpus of regulations, sections, the Federal Register and other data sets FWS may want to analyze such as policy manuals, standards or guidelines. In the process, FWS SME's with the help of Deloitte will discover, analyze, pose, ponder, and identify regulations, similarities, cross agency considerations and the like to better inform FWS's mission.

A notional project would produce scientific and technical information and reports containing a detailed analysis on regulatory issues and considerations. To develop these reports, the following activities will be conducted as appropriate:

- Client and stakeholder interviews
- Facilitate a lab discussion to refine target research questions
- Conduct analysis through Regulatory Explorer to identify of areas of regulatory overlap and duplication, identification of outmoded regulation and broken regulatory links, or "orphan regulations," and a dependency tree that traces the parent-child relationships among regulations and related rules
- Produce interim insight reports that can be used to refine analysis
- Produce a summary blueprint of options to streamline regulations and/or reduce burden in the system

Initial Research Questions: Notionally, working alongside relevant FWS subject matter experts, the Deloitte team would use Agile Sprints (small projects) to work through specific research questions utilizing the Regulatory Explorer Tool and the knowledge and curiosity of the FWS team. Each sprint would produce a specific report of the findings and their implications based on the business question. For illustrative purposes, these may include:

1. With the 1-in/2-out rule in mind, what regulations may be eligible for removal?
2. What regulations are specifically related to the protection of endangered species both within DOI and across agencies (e.g., EPA)? For this we could focus on particular species (e.g.: salmon) or categories of species (e.g.: fish)
3. What DOI FWS documentation or industry guidance could be ingested into the tool to understand full scope of authorities and relevant industry standards? This would be a data ingestion sprint that would result in analyzing the traceability of regulations to specific expected practices (e.g.: resource plans)
4. What is the full citation structure related to DOI FWS? Are there opportunities to clean up "broken links" or overly-complex citations that create additional burden on both government and industry?

Directional Estimate: Subject to further discussion and feedback with FWS, Deloitte can prepare a proposal for consideration.

To: aurelia_skipwith@ios.doi.gov[aurelia_skipwith@ios.doi.gov]
From: Van Ness Feldman
Sent: 2018-05-23T16:08:16-04:00
Importance: Normal
Subject: [EXTERNAL] Van Ness Feldman Welcomes Former DOI Principal Deputy Assistant Secretary, Jason Larrabee, to Government Relations Practice
Received: 2018-05-23T16:19:08-04:00

[Read more about Jason.](#)

Van Ness Feldman Welcomes Former DOI Principal Deputy Assistant Secretary, Jason Larrabee, to Government Relations Practice

May 23, 2018

Van Ness Feldman LLP is pleased to announce that Jason Larrabee, former Principal Deputy Assistant Secretary for Fish and Wildlife and Parks at the Department of the Interior, has joined the firm's Washington, DC office as a Senior Policy Advisor. Mr. Larrabee brings over twenty years of public sector experience to the firm, having worked in various positions in Congress, including most recently, as Chief of Staff to Congressman Jeff Denham (R-CA).

Announcing Mr. Larrabee's arrival, firm Chair Richard Agnew, said "We are delighted to have Jason as part of our government relations team. His time in public service, experience in regulatory matters since early in his career, and deep understanding of our client's industries are assets. In addition to his considerable experience with natural resources law and policy and special focus on water and agriculture, Jason's familiarity with the House Transportation and Infrastructure Committee significantly complements the firm's public policy capabilities. I look forward to our clients having the opportunity to work with Jason in achieving their business imperatives."

Mr. Larrabee will utilize his experience at DOI and in Congress to focus on providing clients with policy guidance and strategic advice on natural resources, agriculture, energy, and transportation policy issues, including those related to the Department of Transportation, the Pipeline and Hazardous Materials Safety Administration, the Federal Emergency Management Agency, the General Services Administration, and railroads.

During his time at the Department of the Interior, Mr. Larrabee also provided policy guidance on a diverse array of matters ranging from concessionaire issues to the Endangered Species Act, National Historic Preservation Act, Land and Water Conservation Fund, migratory birds, National Environmental Policy Act, National Parks, permitting, recreation, and wildlife refuges.

Mr. Larrabee holds an M.B.A. from Drexel University and a B.A. from California State University, Chico. Mr. Larrabee can be reached at 202.298.1877 or via email at jlarrabee@vnf.com.

###

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To: 'Skipwith, Aurelia'[aurelia_skipwith@ios.doi.gov]
From: Ann W Loomis
Sent: 2018-05-24T12:42:43-04:00
Importance: Normal
Subject: FW: [EXTERNAL] ACP - Migratory Bird Waiver Request
Received: 2018-05-24T12:42:56-04:00

Aurelia,

I wanted to be sure you were aware that the Atlantic Coast Pipeline is working with the FWS regional office on a limited time-of-year modification to conduct tree felling in specific areas. This request does not affect species addressed in the Biological Opinion. Leslie Hartz, our Vice President for ACP Construction, and I would like to schedule a meeting with you and Susan Combs at your earliest convenience. I would be pleased to work with your schedulers to find a convenient date if you could provide their contact information.

Thank you,

Ann

Ann Loomis | Vice President, Federal Affairs | Dominion Energy
400 N. Capitol Street, NW, Suite 875, Washington, DC 20001
202.585.4205 (o)
202.997.1849 (c)



From: Phifer, Paul [mailto:paul_phifer@fws.gov]
Sent: Thursday, May 24, 2018 12:03 PM
To: Spencer Trichell (Services - 6)
Cc: Cindy Schulz; Richard B Gangle (Services - 6)
Subject: Re: [EXTERNAL] ACP - Migratory Bird Waiver Request

Spencer -

Thank you for the letter. We will review and respond as soon as possible as we know this issue is time sensitive.

Paul

Paul Phifer, PhD
Assistant Regional Director - Ecological Services
Northeast Region
Dept of the Interior
US Fish and Wildlife Service

413.253.8698 work
413.687.4764 cell

On Wed, May 23, 2018 at 6:12 PM, Spencer Trichell
<Spencer.Trichell@dominionenergy.com> wrote:
Mr. Phifer,

Atlantic and DETI request the Service's consideration of the attached waiver request for migratory birds associated with tree felling and mowing activities on the Atlantic Coast Pipeline and Supply Header Projects.

Feel free to contact me if you have questions.

Regards,

Spencer Trichell
Environmental Consultant Atlantic Coast Pipeline

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O:(804)-273-3472 M:(804)-263-5980
spencer.trichell@dominionenergy.com



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To: Skipwith, Aurelia[aurelia_skipwith@ios.doi.gov]
Cc: Mennel, John (US - Arlington)[jmennel@deloitte.com]; Gracie, Matthew (US - McLean)[magracie@deloitte.com]; Brian Kelly[bkelly@bkstrategies.com]
From: Cassidy, John Kenneth (US - Arlington)
Sent: 2018-05-29T10:03:45-04:00
Importance: Normal
Subject: [EXTERNAL] RE: Reg Explorer Follow-up for FWS
Received: 2018-05-29T10:09:55-04:00
Smart Reg Placemat.pptx
DOI FWS Reg Explorer ExecSum 051818.docx

Hi Aurelia – hope you had a nice Memorial Day weekend. I wanted to follow-up on my note below to see if you'd have 30 minutes this week to continue our discussion on the RegExplorer tool and how it could be used at FWS.

Hope all is well.

Regards,
John

From: Cassidy, John Kenneth (US - Arlington)
Sent: Friday, May 18, 2018 10:17 AM
To: Skipwith, Aurelia <aurelia_skipwith@ios.doi.gov>
Cc: Mennel, John (US - Arlington) <jmennel@deloitte.com>; Gracie, Matthew (US - McLean) <magracie@deloitte.com>; 'Brian Kelly' <bkelly@bkstrategies.com>
Subject: Reg Explorer Follow-up for FWS

Hi Aurelia – good to see you earlier this week and thank you for the time to show you the Reg tool. As you requested, we're following-up with some additional information on how it could be used at FWS. Attached are two documents – the first is a general overview/placemat of the tool; the second is a one-page summary of how we think it could be useful to you and your colleagues at FWS, including the ongoing work related to ESA.

I didn't include any level-of-effort or budget information in these documents, but happy to have that conversation with you as a follow-up and to make any adjustments to the one-page document, as needed.

Have a great weekend and looking forward to being in touch soon.

Regards,
John

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v.E.1

To: AURELIA_SKIPWITH@IOS.DOI.GOV[AURELIA_SKIPWITH@IOS.DOI.GOV]
From: Concur Travel
Sent: 2018-06-01T08:33:36-04:00
Importance: Normal
Subject: Concur Itinerary 06/12/2018: IDAHO TRAIL AND LAND MANAGEMENT (OMYVUI)
Received: 2018-06-01T08:34:52-04:00
[DCA-BOI.ics](#)
[BOI-DCA.ics](#)

Trip Overview

Trip Name: Idaho Trail and Land Management

Start Date: June 12, 2018

End Date: June 14, 2018

Created: June 01, 2018, AURELIA SKIPWITH (*Modified: June 01, 2018*)

Description: Traveler participating in Idaho's Annual Trail Ride to discuss DOI's priorities and address Western natural resource issues: prescribed management of lands with endangered species and critical habitat, grazing permit renewals, wildfire management and invasive plant species, wolf depredation, streamlining NEPA. Traveler will engage with other federal and state agencies with land management authority, ranchers, NGOs, academics, and resource managers. Traveler will camping outdoors and not staying in a hotel.

Trip Purpose: Mission (Operational)

Agency Record Locator: OMYVUI

Passengers: Aurelia Skipwith

Total Estimated Cost: \$563.14 USD

Important: Reservations must be approved and ticketed no later than: 06/10/2018 6:00 AM Eastern

The trip will be automatically cancelled if it is not approved before the deadline.

Agency Name: DTI DOI

Reservations

Tuesday, June 12, 2018



Flight Washington, DC (DCA) to Seattle, WA (SEA)

Alaska Airlines 1

Departure: 08:00 AM

Seat: 19B

Washington D.C. Ronald Reagan

National Airport (DCA)

Terminal: B

Duration: 5 hours, 58 minutes

Nonstop

Arrival: 10:58 AM

Seattle Tacoma Intl Airport (SEA)

Confirmation: ORTUUH

Status: Confirmed

Additional Details

Aircraft: Boeing 737 800

Distance: 2321 miles

E Ticket

Emissions: 905.2 lbs CO₂

Cabin: Economy (V)

Meal: Food for purchase



1 hr, 20 min layover at Seattle-Tacoma Intl Airport (SEA)

Flight Seattle, WA (SEA) to Boise, ID (BOI)

Alaska Airlines 901

Departure: 12:18 PM
Seat:22E
Seattle Tacoma Intl Airport (SEA)
Duration: 1 hour, 27 minutes
Nonstop
Arrival: 02:45 PM
Boise Airport (BOI)

Confirmation: ORTUUH
Status: Confirmed

Additional Details

Aircraft: Boeing 737 Distance: 398 miles
E Ticket
Emissions: 171.1 lbs CO₂
Cabin: Economy (V)



Hertz Car Rental at: Boise US (BOI)

Pick up at: Boise US (BOI)

Pick Up: 02:45 PM *Tue Jun 12*
Pick up at:Boise US (BOI)
Number of Cars:1
Return: 08:00 AM *Thu Jun 14*
Returning to:Boise US (BOI)

Confirmation: H68437375B8
Status:Confirmed
Rate Code:GOV1

Additional Details

Please review the details of the rental vehicle selected for accuracy.

Rate: \$46.00 USD daily rate, unlimited miles; \$15.33 USD extra hourly rate, unlimited miles
Total Rate: \$124.04 USD Corporate Discount: 2081413

Rental Details

Economy / Car / Automatic transmission / Air conditioning



Thursday, June 14, 2018



Flight Boise, ID (BOI) to Portland, OR (PDX)

Alaska Airlines 2822
OPERATED BY /HORIZON AIR AS ALASKAHORIZON

Departure: 08:00 AM
Seat:No seat assignment
Boise Airport (BOI)
Duration: 1 hour, 19 minutes
Nonstop
Arrival: 08:19 AM
Portland Airport (PDX)

Confirmation: ORTUUH
Status: Confirmed

Additional Details

Aircraft: E 175 Distance: 343 miles

E Ticket
Emissions: 147.5 lbs CO₂
Cabin: Economy (V)



1 hr, 31 min layover at Portland Airport (PDX)

Flight Portland, OR (PDX) to Washington, DC (DCA)

Alaska Airlines 764

Departure: 09:50 AM
Seat: No seat assignment
Portland Airport (PDX)
Duration: 4 hours, 59 minutes
Nonstop

Arrival: 05:49 PM
Washington D.C. Ronald Reagan
National Airport (DCA)
Terminal:B

Confirmation: ORTUUH
Status: Confirmed

Additional Details

Aircraft: Boeing 737 800	Distance: 2343 miles
E Ticket	
Emissions: 913.8 lbs CO ₂	
Cabin: Economy (V)	Meal: Food for purchase



Total Estimated Cost

Air
Airfare quoted amount: \$370.24 USD
Taxes and fees: \$68.86 USD
Air Total Price: \$439.10 USD
Car: \$124.04 USD

Total Estimated Cost: \$563.14 USD

TICKET NOT YET ISSUED. AIRFARE QUOTED IN ITINERARY IS NOT GUARANTEED UNTIL TICKETS ARE ISSUED.

Remarks

ENSURE THAT ALL RESERVATIONS AND ESTIMATED COSTS
LISTED ABOVE ARE CORRECT AND MATCH WHAT IS LISTED
IN TRAVEL AUTHORIZATION.

U05/UUN/35*C73
OLB DTI
U89/C7AD1988986
U22/DOIDOSASFWP
U25/40211961

To: MoritzW@michigan.gov[MoritzW@michigan.gov]
Cc: Claire.Beck@dnr.state.oh.us[Claire.Beck@dnr.state.oh.us]; Boggess, Ed (DNR)[ed.boggess@state.mn.us]; gregory_sheehan@fws.gov[gregory_sheehan@fws.gov]; Walker, Dave[dave_walker@fws.gov]; tom_melius@fws.gov[tom_melius@fws.gov]; Skipwith, Aurelia[aurelia_skipwith@ios.doi.gov]
From: Ryan Yates
Sent: 2018-06-04T16:27:43-04:00
Importance: Normal
Subject: [EXTERNAL] Farm Bureau Comments on Mid-America Monarch Conservation Strategy
Received: 2018-06-04T17:00:23-04:00
[MAFWAMonarchPlanComments\(06.04.18\).pdf](#)

All

Please see the attached comments regarding the proposed Mid-America Monarch Conservation Strategy submitted on behalf of the American Farm Bureau Federation (AFBF) and the 1,561,029 members of the state Farm Bureaus of Arizona, Illinois, Indiana, Iowa, Kentucky, Maryland, Missouri and Oklahoma.

Thank you.

RYAN R. YATES | Director of Congressional Relations
American Farm Bureau Federation ®

600 Maryland Ave, SW Suite 1000W | Washington, DC 20024
Office 202.406.3664 | Mobile 202.641.1416

June 4, 2018

Bill Moritz, Chairman
Board of Directors
Midwest Association of Fish and Wildlife Agencies
Mid-America Monarch Conservation Strategy

Email letter to: moritzw@michigan.gov
Cc: Ed Boggess (ed.boggess@state.mn.us), Claire Beck (Claire.Beck@dnr.state.oh.us)

Dear MAFWA Board of Directors,

These comments are being submitted on behalf of the American Farm Bureau Federation (AFBF) and the 1,561,029 members of the state Farm Bureaus of Arizona, Illinois, Indiana, Iowa, Kentucky, Maryland, Missouri and Oklahoma. Farm Bureau is a non-profit, membership organization directed by farmers who join through their county Farm Bureau. In 1919, farmers and ranchers formed AFBF so they could work together, speak in a unified voice and, as a group, achieve what others alone could not. It is with that same goal in mind, that we all join today to provide comments regarding the draft Mid-America Monarch Conservation Strategy (Strategy). We appreciate the opportunity to provide our perspective.

To begin, in follow up to our exchange of correspondence several months ago, we would like to state that we, like MAFWA, are committed to keeping the lines of communication open between our organizations as we pursue efforts that support monarchs. We appreciate your acknowledgement of the special and important role that private agricultural lands and farmers will play in the conservation of monarch butterflies in years to come. We, likewise, appreciate your commitment to working with agricultural partners on voluntary and incentive-based approaches in this endeavor.

That said, we do have some lingering concerns with the focus, representation, and scale of the Strategy, which we state herein, coupled with opportunity areas for MAFWA to consider.

The Strategy references the primary sectors that are necessary for the effort including private agricultural lands, protected natural lands (public and private), rights-of-way (transportation and energy), urban and developed lands, and other energy infrastructure. The Strategy also states that “participation by all sectors will be needed to accomplish successful monarch conservation.” The Strategy states that it will be an “All Hands on Deck” approach, yet the spirit of the Strategy does not convey equal attention on the part of MAFWA to each sector. The bulk of the narrative and the statements made for future direction appear to focus solely on private agricultural lands.

Despite the Strategy’s attention on private agricultural lands, very little has been done at the regional level to meaningfully engage groups like ours that are comprised solely of private agricultural landowners and farmers. We continue to believe that MAFWA’s Strategy, and its approach into the future, has the best chance of success if it is framed, not as it currently is in the Strategy, but as a framework for each state to continue to engage its stakeholders at the most local of levels. We have seen from experience that that level of activity will allow every sector,

every industry, and every community to have a similar sense of responsibility and opportunity to help the cause. It is our belief that the Strategy would be better suited to articulate the governance that has been established by MAFWA for this effort, discuss the science, and outline state plans.

To help illustrate our point, it is important to note that it is repeated multiple times within the Strategy that, on agricultural landscapes, conservation will be applied in small increments on less productive portions of fields and border areas, many conservation efforts will be small scale (one acre or less) and “effective conservation will require hundreds of thousands of efforts across tens of thousands of land ownerships. Accomplishing the goal within the next 20 years will require a concerted and focused approach working with cooperating landowners and managers on voluntary and incentive-based efforts to restore and enhance private land habitats, as well as increased public land management.” This will only occur with a framework that looks much different from the current MAFWA framework.

As stated in our previous correspondence, many of our state Farm Bureau staff and farmer members are actively involved in state-level planning around monarch conservation. These state planning efforts mostly follow the same approach and bring diverse sector representatives to the table. A major difference between the MAFWA planning effort and those state-level efforts are the involvement of agricultural organizations, such as the Farm Bureau and other commodity and agribusiness groups, the involvement of state Departments of Agriculture, and the involvement of program staff from USDA. When groups like these are involved, it allows an effort to better understand the expertise of farmer priorities and needs, the regulatory world in which farmers operate, and a true understanding of how farm programs work and could work into the future.

Further, the Strategy’s approach of informing policy and program changes to achieve monarch conservation goals is also of concern. While the majority of work will happen on private agricultural lands, the Strategy calls for increased agency and partner resources. That acknowledgement does little to convince the U.S. Fish & Wildlife Service (USFWS) that the conservation goals can be met and a listing should be precluded, which is also a stated goal of the Strategy.

Also importantly, we are concerned that the Strategy focuses largely on recommending changes to Farm Bill programs for the benefit of the monarch butterfly, and does not provide that same level of evaluation or recommendation as to other federal programs, NGO or industry efforts that could also be tweaked to benefit the cause more efficiently or effectively. One area where we are appreciative of MAFWA support is in urging the USDA Farm Service Agency to enter into a Section 7 Consultation and Conference Report with the USFWS to provide predictability to farmers that have enrolled in the Conservation Reserve Program. We too have requested that of our federal agencies.

Again, it is our belief that the Strategy would be better suited to articulate the governance that has been established by MAFWA for this effort, discuss the science, and outline state plans. References to Farm policy and work by a set of conservation partners should be removed and programs that stakeholders are using should be left for inclusion in state plans.

Finally, we believe that proactive conservation by a variety of stakeholders can preclude the need to list the monarch butterfly as a threatened or endangered species under the Endangered Species Act. We continue to work towards that goal by sharing our conservation vision for the monarch in our state plans.

Thank you for the opportunity to comment on the draft Strategy. We appreciate your consideration of these comments and would be available for future discussion on the topic. As a future opportunity area, if it is appropriate, we would be interested in hearing more about the meetings you have planned for Fall 2018 to create action items from this draft plan. Please contact Ryan Yates at AFBF for any questions or more information (ryany@fb.org or 202-406-3664).

Sincerely,

American Farm Bureau Federation

Arizona Farm Bureau Federation

Illinois Farm Bureau

Indiana Farm Bureau

Iowa Farm Bureau Federation

Kentucky Farm Bureau Federation

Maryland Farm Bureau

Missouri Farm Bureau Federation

Oklahoma Farm Bureau

cc:

Greg Sheehan, USFWS

Michael Gale, Special Assistant, USFWS

Dave Walker, USFWS

Tom Melius, USFWS

Aurelia Skipwith, DOI

To: aurelia_skipwith@ios.doi.gov[aurelia_skipwith@ios.doi.gov]
From: WAFWA
Sent: 2018-06-05T09:01:19-04:00
Importance: Normal
Subject: [EXTERNAL] On the Horizon - News from WAFWA
Received: 2018-06-05T09:02:29-04:00

The Western Association of Fish and Wildlife Agencies (WAFWA) has released a new report that provides a comprehensive assessment of fire and invasive management options for the conservation of sagebrush in the western United States. The report was produced by a multi-agency Wildfire and Invasive Species Working Group and updates a gap analysis report published five years ago. It includes an overview of remaining work to be accomplished, with recommendations for actions to improve the conservation and management of the sagebrush biome.

The report is titled "Wildfire and Invasive Plant Species in the Sagebrush Biome: Challenges that Hinder Current and Future Management and Protection – A Gap Report Update." It builds on work published in 2013 that summarized the policy, fiscal, and science challenges that land managers have encountered in conserving sagebrush, especially regarding control and reduction of the invasive annual grass/fire cycle.

"The Gap Report Update has something for every level, public and private, to consider helping address the fire and invasive threat," said Virgil Moore, Director of Idaho Department of Fish and Game and director liaison of WAFWA's Sagebrush Initiative. "We encourage the leaders of the agencies and organizations working on sagebrush conservation to review the recommendations in the report and determine if there are actions they can take directly to address the gaps. It will take a broad-based coalition working together to ensure healthy sagebrush ecosystems are available for generations to come."

In late-March the Wildlife Division, Department of Environment and Natural Resources, Government of the Northwest Territories petitioned membership into WAFWA. With subsequent Executive Committee approval, the agency became WAFWA's 24th member, which now includes 19 western states, three Canadian provinces and two Canadian territories.

This is a very significant and positive development. The Northwest Territories encompass 519,700 square miles of western Canada not previously represented in WAFWA - nearly twice the size of Texas and 80% the size of Alaska. It will further serve to engage another Canadian director in WAFWA on several fronts, including, wild sheep, wildlife health and endangered species.

"We very much appreciate the work that WAFWA does and recognize the importance of maintaining strong collaborative networks amongst agencies faced with shared challenges," said Brett Elkins, Director of the Wildlife Division, Department of Environment and Natural Resources.

Both western and eastern populations of the monarch butterfly have shown significant declines since 1997. Based on those declines, the U.S. Fish and Wildlife Service received a petition to list the monarch butterfly as threatened under the Endangered Species Act in the summer of 2014. WAFWA Directors approved the formation of the Monarch Working Group in July 2017 to identify and encourage unified, ecosystem-based management approaches at the landscape-level for the western population of the monarch butterfly, and pollinators in general, across all partner agencies.

The working group includes representatives from Arizona, California, Idaho, Nevada, Oregon, Washington, and Utah. A Western Monarch Conservation Plan is being developed, which will use the Crucial Habitat Assessment Tool (CHAT) to

inform its efforts. CHAT is a non-regulatory system of online maps, which presents data in a hexagon format that provides a landscape-scale perspective of habitat but does not identify specific locations or property ownership. CHAT's role on the monarch project will be to transition location-specific habitat data into the hexagon framework that identifies landscape-scale approach to conservation efforts. CHAT will also help transition these data from static maps into an interactive web-based tool to support tracking of conservation actions for the monarch and other pollinators.

The Western Native Trout Initiative (WNTI) and its partners are once again offering opportunities for community organizations to tap into dollars to protect, restore or recover western native trout. WNTI is a WAFWA program that is a collaborative, multi-state, multi-partner effort that focusses on the conservation needs of 21 native trout species in the 12 western states where they are found. The 2018 Small Grants Program Request for Proposals (RFP) will be accepting applications until June 15, 2018. The program specifically funds innovative projects that "jump start" or complete smaller, high-impact efforts. Individual projects can be funded at a maximum of \$3,000.

"These \$3,000 grant awards may be a relatively small dollar figure, but they are having a big impact," said Therese Thompson, WNTI Coordinator. "Over six previous years of funding, this grant program has consistently catalyzed some of the most innovative community-based projects that are making a difference for native trout conservation across the western U.S."

The 2018 Small Grants Program is supported by generous donations from project partners at Running Rivers, RepYourWater, and Basin+Bend and contributions from numerous individual donors. The full RFP can be found [here](#)

The Western Native Trout Initiative (WNTI) invites you to share your catch on Instagram! Instagram is a social networking app made for sharing photos and videos from a smartphone. WNTI has a thriving Instagram feed @westernnativetROUT where we share gorgeous photos of western native trout, anglers, and western waters. There are more than 6,200 followers and 420 photographs posted to date. We invite our followers to send us their photos with the native trout they encounter in the West.

Come Join us!

[@westernnativetROUT](https://www.instagram.com/westernnativetROUT/)

Pin

Share

Forward

+1

Register for WAFWA Conference!

The WAFWA 2018 Annual Conference will be held July 12-17 in Eugene, Oregon

[Register Here](https://www.wafwa.org/2018-annual-conference)

Photo Credits: US Fish and Wildlife/Wyoming Game and Fish Department, Department of Environment and Natural Resources, Government of Northwest Territories, Jena Donnell OWDC, Colorado Parks and Wildlife, WNTI, @velocity_photography, @derekkolthuis, @intothewildwego, Greg Yamada

2700 W Airport Way, Boise, Idaho 83705 | 208-331-9431

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To: 'aurelia_skipwith@ios.doi.gov'[aurelia_skipwith@ios.doi.gov]
Cc: Melinda Tomaino[tomainom@agc.org]; Leah Pilconis[pilconisl@agc.org]
From: Leah Pilconis
Sent: 2018-06-05T10:28:24-04:00
Importance: Normal
Subject: [EXTERNAL] FWS Presentation at AGC's Environmental Conf (Commercial Construction)
Received: 2018-06-05T10:28:38-04:00
[TentativeScheduleCEC2018.pdf](#)

Dear Aurelia –

It was a pleasure speaking with you this morning. As discussed, we would like to formally invite you to present at [AGC's 2018 Construction Environmental Conference](#) on September 12-13, in Crystal City, Virginia. We have time set aside an hour – from **10:00 to 11:00 AM** – on **Thursday, September 13** for an FWS update/overview. My colleague, Melinda Tomaino, director of AGC's environmental services, (copied on this email) is administering this conference; please keep an eye out for any follow-up emails from her – tomainom@agc.org / 703.837-5415 – and don't hesitate to reach out if you need more information.

Below is a short bulleted list of issues that are of interest to the commercial construction industry, but please feel free to share additional items that you want to bring to our attention. Some time at the end for questions would be great, too.

Attached please find the schedule of events, subject to change. You are welcome to join us for any part of the conference, as your schedule permits. As I mentioned, and as you can see from our conference Website at <http://meetings.agc.org/cec/>, a group of AGC in-house environmental managers will meet on September 11 for a day of roundtable discussions on *issues that they pick*. And following the conference, which I did not mention, our environmental Steering Committee (a smaller group), meets with federal agency staff to discuss regulatory/policy issues that are on the horizon. We have not set that agenda yet; perhaps we will identify a need for our 2 groups to meet to talk face-to-face about some of the topics below.

FWS ISSUES OF INTEREST TO AGC CONTRACTORS

- New DOI [memorandum](#) that the Migratory Bird Treaty Act (MBTA) does not prohibit incidental take. Also subsequent DOI guidance to assist agencies within the Department with implementation of the MBTA memo.
- FWS [guidance memorandum](#) addressing when an incidental take permit (ITP) may be needed under Section 10(a)(1)(B) of the Endangered Species Act for projects that modify habitat of federally listed species.
- The following FWS planned regulatory actions:
 - Clarify and improve rules governing [interagency cooperation](#)(link is **external**) related to Endangered Species Act Section 7 implementation.
 - Review and revise regulations for [listing of species and for designation of critical habitat](#)(link is **external**).
 - Update list of [migratory birds](#)(link is **external**).

Thank you again for your interest in [AGC's 2018 Construction Environmental Conference](#). We very much look forward to your participation – and, most especially, to opening up the lines of communication with FWS.

Warm regards,

Leah

Leah F. Pilconis

Senior Counsel, Construction & Environmental Risk Management

The Associated General Contractors of America -- 2300 Wilson Blvd., Suite 300, Arlington, VA 22201

703.837.5332 | pilconisl@agc.org | @AGCEnvironment | linkedin.com/in/LeahPilconis |

www.agc.org/environment



— WEDNESDAY, Sept 12 —

7:15 AM **Breakfast and CEC Registration**

7:45-8:00 **Welcome Remarks**

8:00-8:30 **Regulatory / Legislative Outlook**

8:35-9:30 **Where We Are with WOTUS and Issues with 404 Permitting**

The session will address WOTUS rule developments as well as some of the 404 permitting roadblocks we have heard from members over the past year, including those that relate to species within the permitting process.
 LARRY LIEBESMAN, DAWSON ASSOCIATES

9:30-9:45 **Refreshment Break**

9:45-11:00 **Identifying, Avoiding, Mitigating, and Insuring Environmental Risk in Construction**

Panel speakers will present risk assessment and identification from a jobsite perspective, risk allocation such as contract shifting clauses and management strategies, risk transfer such as avoidance of pollution liability and insurance products available.

ADRIAN PELLEN, MARSH (MODERATOR)

CHIP D'ANGELO, WCD GROUP

RON ROBEY, SMITH, CURRIE & HANCOCK LLP

DAVID SLAUGENHOUP, NEW DAY UNDERWRITING

11:00-11:15 **Room Transition**

11:15-12:15 **Environmental Compliance for Hazardous Materials on a Public Private Partnership Project: CDOT Central 70**

Using the CDOT Central 70 project as a backdrop, this panel will share perspectives from the owner and industry including a discussion of the unique procurement process and approaches related to management of hazardous materials during the procurement, kickoff, and construction phases of the project. CDOT Central 70 is a \$1.2 billion project to expand I-70 between Denver and Aurora in Colorado.

BOB HAYS, CDOT

JENN BRADTMUELLER, KIEWIT MERIDIAN

SCOTT EPSTEIN, PINYON ENVIRONMENTAL

12:15-1:30 **Networking Lunch**

1:30-2:30 **Planning, Community Involvement, Restoration, and Natural Resources Management**

This session will discuss how to focus (and deliver) your mitigation/restorative efforts on what will meet community and wildlife needs. Explore opportunities and strategies for ecologically regenerative development around a proposed highway corridor; as well as how to management public outreach, early engagement on large projects, working with tribes and building a rapport with the community.

CHUCK BUDINGER, AZ DEPT OF TRANSPORTATION

ANNE ALLEN, HUWA ENTERPRISES, LLC

Redevelopment Opportunities and Risk

This session will examine recent changes to policy related to Superfund/Brownfields (such as the BUILD Act) as well as the potential hazards in the use of those sites., such as vapor intrusion.

JERRY WORSHAM II, CAVANAGH LAW FIRM, PA

RON JAMES, DOMINION DUE DILIGENCE GROUP (D3G)

Smart Fab: The Great Equalizer

Seventy-seven percent of respondents to a recent poll indicated that prefabrication is gaining acceptance and adoption in the industry. This session will discuss the positive impact on projects, such as in the area of energy efficient materials, life cycle analysis, technology and smart components. Speakers will also discuss the impact that Smart Fab can have on: productivity, manpower, project schedules, material waste, and labor efficiency.

BRENT MOSZETER, KAPTURE GROUP

SCOTT ROOT, KAPTURE GROUP

2:30-2:45	Refreshment Break	
2:45-3:45	Electronic Solutions for Environmental Training and Compliance This contractor panel will discuss electronic solutions employed on jobsites. Electronic tools are helping assist with inspections in the field, tracking permits and creating dashboards to identify trends. Electronic solutions are also used to provide training to employees without having the employees travel. LIZ FIFER, KIEWIT ADD'L CONTRACTOR REPRESENTATIVES INVITED	Sustainable Materials Management: Considerations for Life-Cycle Assessment EPA and industry representatives will give a summary of a recent EPA summit exploring LCA, discuss related advances in materials, and explore sustainable materials/waste management. INVITED PANEL: RITA CHOW, ORCR, EPA JOSEPH SHACAT, NATIONAL ASPHALT PAVING ASSN BILL TURLEY, CONSTRUCTION & DEMOLITION RECYCLING ASSN
3:45-4:00	Room Transition	
4:00-5:00	Tips on How to Avoid Environmental Enforcement Actions An attorney and contractor duo will discuss "true story" construction related enforcement cases and best practices on how to avoid them. BROOKS SMITH, TROUTMAN SANDERS CONNIE DETERMAN, KIEWIT CORP	An attorney and contractor duo will discuss "true story" construction related enforcement cases and best practices on how to avoid them. BROOKS SMITH, TROUTMAN SANDERS CONNIE DETERMAN, KIEWIT CORP
5:00-6:00	Networking Reception	
7:00	Wednesday Night Dine Around at Local Restaurants (Sign-up at the Registration Desk)	
———— THURSDAY, Sept 13 ——		
7:15 AM	Breakfast	
7:45-8:00	Welcome Remarks	
8:00-8:30	KEYNOTE SPEAKER AGENCY REPRESENTATIVE INVITED	
8:30-9:45	Agency Briefs Panel AGC has invited representatives from several program offices at the Environmental Protection Agency to participate in providing briefs on important and emerging issues (e.g., stormwater, groundwater, 404 permitting, aerosol cans, and lead-based paint) and programs such as the Smart Sectors Partnership. AGENCY REPRESENTATIVES INVITED	AGC has invited representatives from several program offices at the Environmental Protection Agency to participate in providing briefs on important and emerging issues (e.g., stormwater, groundwater, 404 permitting, aerosol cans, and lead-based paint) and programs such as the Smart Sectors Partnership. AGENCY REPRESENTATIVES INVITED
9:45-10:00	Refreshment Break	
10:00-11:00	Key Developments Related to Species and Migratory Birds Fish and Wildlife Service representative will provide information on recent policy changes related to endangered and threatened species as well as requirements related to migratory birds. AGENCY REPRESENTATIVE INVITED	Fish and Wildlife Service representative will provide information on recent policy changes related to endangered and threatened species as well as requirements related to migratory birds. AGENCY REPRESENTATIVE INVITED
11:00-11:10	Stretch Your Legs Break	
11:10-12:00	Hazardous Chemical Inventory Reporting for the Construction Industry This session explores how the Emergency Planning and Community Right-to-Know Act requirements play out on a construction project. EPCRA requires reporting about the hazards of chemicals used and stored on-site. This presentation will provide an overview of what materials are reportable under EPCRA, how and when to submit reports, relevant exemptions from reporting and potential consequences of noncompliance. BRIAN MORRILL, CHMM, CET, GZA GEOENVIRONMENTAL, INC	This session explores how the Emergency Planning and Community Right-to-Know Act requirements play out on a construction project. EPCRA requires reporting about the hazards of chemicals used and stored on-site. This presentation will provide an overview of what materials are reportable under EPCRA, how and when to submit reports, relevant exemptions from reporting and potential consequences of noncompliance. BRIAN MORRILL, CHMM, CET, GZA GEOENVIRONMENTAL, INC
12:00-12:30	Wrap-Up Session (Take Aways); Closing Remarks and Raffles	
12:30	Adjourn	

To: Aurelia Skipwith[aurelia_skipwith@ios.doi.gov]
From: Ethan Lane
Sent: 2018-06-09T10:16:49-04:00
Importance: Normal
Subject: [EXTERNAL] Re: E&E News- NOI to remove take order
Received: 2018-06-09T10:17:14-04:00

Yup, makes sense. Thank you!

Ethan L. Lane
Executive Director
Public Lands Council &
NCBA Federal Lands
(202) 879-9126 direct

From: Aurelia Skipwith <aurelia_skipwith@ios.doi.gov>
Sent: Saturday, June 9, 2018 10:15:35 AM
To: Ethan Lane
Subject: E&E News- NOI to remove take order

Ethan,
Just following up about the article...

The Notice of Intent to publish a rule (NOI) that was removed from the Federal Register was to stop an effort to establish a Migratory Bird Treaty Act (MBTA) "incidental take" permit program; started in the last administration. When the MBTA M-Opinion was developed in December of 2017, it made the need for an "incidental take" permit program obsolete. Hence, the cancellation of the NOI.

And this is not related to anything with black vultures.

Aurelia Skipwith
Deputy Assistant Secretary
for Fish and Wildlife and Parks

U.S. Department of Interior
1849 C Street NW, Room 3148
Washington, DC 20240
202-208-5837

To: Skipwith Aurelia[aurelia_skipwith@ios.doi.gov]; John Mennel[jmennel@deloitte.com]; magracie@deloitte.com[magracie@deloitte.com]; jocassidy@deloitte.com[jocassidy@deloitte.com]
From: Brian Kelly
Sent: 2018-06-11T15:44:39-04:00
Importance: Normal
Subject: [EXTERNAL] Follow up meeting with Susan and Aurelia on ESA
Received: 2018-06-11T15:44:46-04:00

Aurelia

Per our last conversation wanted to see if we could get on yours and Susan's calendar for Monday the 18th.

Look forward to seeing you soon.

Brian Kelly

(b)(6)

To: (b)(6) (b)(6); (b)(6) (b)(6); zbodhane@westgov.org[zbodhane@westgov.org]; sbrondax@edf.org[sbrondax@edf.org]; katharine.burgess@uli.org[katharine.burgess@uli.org]; acamacho@law.uci.edu[acamacho@law.uci.edu]; myles_culhane@oxy.com[myles_culhane@oxy.com]; kdiersen@defenders.org[kdiersen@defenders.org]; (b)(6) (b)(6); abigail.fateman@cdcc.cccounty.us[abigail.fateman@cdcc.cccounty.us]; denny.grossman@sgc.ca.gov[denny.grossman@sgc.ca.gov]; hallie@westernlandowners.org[hallie@westernlandowners.org]; ahayden@edf.org[ahayden@edf.org]; tomer.hasson@tnc.org[tomer.hasson@tnc.org]; shori@manatt.com[shori@manatt.com]; jingram@MurrietaCA.gov[jingram@MurrietaCA.gov]; dave.kennett@mail.house.gov[dave.kennett@mail.house.gov]; dankeppen@charter.net[dankeppen@charter.net]; Brett Korte[bkorte@law.uci.edu]; clandry@wrcrca.org[clandry@wrcrca.org]; matt_leggett@epw.senate.gov[matt_leggett@epw.senate.gov]; jake@policyinnovation.org[jake@policyinnovation.org]; James Lyons (b)(6); Timothy Male[tmale@policyinnovation.org]; cmarsh@downeybrand.com[cmarsh@downeybrand.com]; Jim McElfish[mcelfish@eli.org]; james.murley@miamidade.gov[james.murley@miamidade.gov]; (b)(6) (b)(6); kristin.neff@nfwf.org[kristin.neff@nfwf.org]; (b)(5),(b)(6) (b)(5),(b)(6); squarles@nossaman.com[squarels@nossaman.com]; kreed@conservationfund.org[kreed@conservationfund.org]; mrupp@edf.org[mrupp@edf.org]; mark_salvo@defenders.org[mark_salvo@defenders.org]; sciara@utexas.edu[sciara@utexas.edu]; ieh@cal.net[ieh@cal.net]; alexis_segal@feinstein.senate.gov[alexis_segal@feinstein.senate.gov]; dsilverla@me.com[dsilverla@me.com]; aurelia_skipwith@ios.doi.gov[aurelia_skipwith@ios.doi.gov]; gerald.solomon@dot.gov[gerald.solomon@dot.gov]; douglas.wheeler@hoganlovells.com[douglas.wheeler@hoganlovells.com]; lwhelton@conservationfinance.org[lwhelton@conservationfinance.org]; david.willms@wyo.gov[david.willms@wyo.gov]; david.zippin@icfi.com[david.zippin@icfi.com]; jeff_newman@fws.gov[jeff_newman@fws.gov]; michael@watershedcouncil.org[michael@watershedcouncil.org]; jake@policyinnovation.org[jake@policyinnovation.org]; Boling, Ted A. EOP/CEQ (b)(6) sbrodnax@edf.org[sbrodnax@edf.org]; dkaiser@edf.org[dkaiser@edf.org]

Cc: Lindell Marsh[marsh@collaboration-in-governance.org]; Lindell Marsh[marsh@lindellmarsh.com]

From: Caitlin McCarthy

Sent: 2018-06-14T12:11:12-04:00

Importance: Normal

Subject: [EXTERNAL] RE: TOMORROW: Center for Collaboration-in-Governance | Environmental Law Institute: The Future of Wildlife Habitat Conservation Planning

Received: 2018-06-14T12:14:27-04:00

CCG Meeting Notes (June 2018).docx

Good afternoon,

An enormous thank you to everyone who was able to join us in person or remotely for yesterday's dialogue. The dialogue was a wonderful success, and I have attached notes from the day to this email. Thank you and we look forward to seeing what emerges from this!

Thank you,
Caitlin

Caitlin F. McCarthy
Director, Associates Program
Environmental Law Institute

1730 M Street NW, Suite 700 | Washington, DC 20036
mccarthy@eli.org | www.eli.org | 202.939.3827

If you're not an ELI member, you should be!
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*****RECENT POST: Presidential Authority & the Antiquities Act*****

 Please consider the environment before printing this e-mail.

From: Caitlin McCarthy
Sent: Tuesday, June 12, 2018 4:19 PM
To: [REDACTED] (b)(6); [REDACTED] (b)(6); 'zbodhane@westgov.org'; 'sbrondax@edf.org'; 'katharine.burgess@uli.org'; 'acamacho@law.uci.edu'; 'myles_culhane@oxy.com'; 'kdiersen@defenders.org'; [REDACTED] (b)(6); 'abigail.fateman@dcdc.cccounty.us'; 'denny.grossman@sgc.ca.gov'; 'hallie@westernlandowners.org'; 'ahayden@edf.org'; 'tomer.hasson@tnc.org'; 'shori@manatt.com'; 'jingram@MurrietaCA.gov'; 'dave.kennett@mail.house.gov'; [REDACTED] (b)(5),(b)(6); 'Brett Korte'; 'clandry@wrcrca.org'; 'matt_leggett@epw.senate.gov'; 'jake@policyinnocation.org'; 'James Lyons'; 'Timothy Male'; 'cmarsh@downeybrand.com'; Jim McElfish; 'james.murley@miamidade.gov'; [REDACTED] (b)(6); 'kristin.neff@nfwf.org'; [REDACTED] (b)(5),(b)(6); 'squarles@nossaman.com'; 'kreed@conservationfund.org'; 'mrupp@edf.org'; 'mark_salvo@defenders.org'; 'sciara@utexas.edu'; 'ieh@cal.net'; 'alexis_segal@feinstein.senate.gov'; 'dsilverla@me.com'; 'aurelia_skipwith@ios.doi.gov'; 'gerald.solomon@dot.gov'; 'douglas.wheeler@hoganlovells.com'; 'lwhelpton@conservationfinance.org'; 'david.willms@wyo.gov'; 'david.zippin@icfi.com'; 'jeff_newman@fws.gov'; 'michael@watershedcouncil.org'; 'Boling, Ted A. EOP/CEQ'
Cc: 'Lindell Marsh'; 'Lindell Marsh'
Subject: TOMORROW: Center for Collaboration-in-Governance | Environmental Law Institute: The Future of Wildlife Habitat Conservation Planning

Good afternoon,

I hope this finds you all well. Many of you have already spoken with our organizer, Lindell Marsh, and I am sending this on his behalf.

Tomorrow we welcome your participation. Many of you are participating in person and many of you remote, **for those of you participating remotely, please register at the following link:**
<https://attendee.gotowebinar.com/register/2784441020929540354> **After registering, you will receive a confirmation email containing information about joining the webinar.** For those of you participating in person, we look forward to seeing you here at the Environmental Law Institute, located at 1730 M Street, NW, Suite 700, in Washington, D.C. 20036.

Tomorrow's invitational dialogue session on Multiple Agency/Interest Collaboration and Funding and Financing Regarding Landscape-Level Conservation in Anticipation of Growth will start right at **9:30am** and conclude at 3:30pm, with a morning break and lunch break.

Please feel free to reach out to Lindell and me with any questions, and we look forward to seeing you tomorrow.

Thank you,
Caitlin McCarthy

Caitlin F. McCarthy
Director, Associates Program
Environmental Law Institute
1730 M Street NW, Suite 700 | Washington, DC 20036
mcCarthy@eli.org | www.eli.org | 202.939.3827

If you're not an ELI member, you should be!
Go [HERE](#) to learn more and/or sign up!

*****RECENT POST: Presidential Authority & the Antiquities Act*****



Please consider the environment before printing this e-mail.

The Future of Wildlife Habitat Conservation Planning: Session Notes

Dialogue Session: June 13, 2018

1. Overview of Past Meetings: Examination of habitat conservation planning and mitigation; looking at various plans and comparing them in their successes and their areas of improvement; Examinations of Chesapeake Bay, Florida, etc. for discovering bigger processes in their plans for habitat conservation
2. Goals for Discussion this Meeting:
 - a. Spatial planning and the use of data to achieve biological objectives
 - b. The role of private finance and funding for these programs
 - c. Determining areas for addition to a book regarding habitat conservation planning in order to organize and articulate a strategy forward for conservation
 - d. Diminishment of boundaries due to the increase of technology leads to increased need for collaboration and coordination
3. Spatial Planning
 - a. Conservation Contracts: Making the HCP and EIS process used for private landowners more efficient and enticing (decreasing time to perform process and the number of pages in the HCP)
 - b. Guiding conservation actions to be more autonomous and concise in terms of spatial planning and innovations (Area of improvement of mitigation in California and other areas)
 - i. Ex: Texas Defenders of Wildlife using satellite maps to find drilling paths in Texas in order to monitor and regulate activities and their impacts
 - c. Move away from analytics into AI for spatial planning (ESRI)
 - i. Emphasizing human values through information systems
 - d. DOT is seeking to identify best practices for their goals while also achieving better environmental outcomes. Fast 41 has a carve-out under 23 U.S.C. 139 for covered projects and DOT has a dashboard for every project requiring an EA or an EIS.
 - i. Eco-Logical is tool used by DOT and other agencies on the landscape scale for mitigation which has been reinvigorated working with the DOT dashboard and following the new objectives following Exec. Order 13807; this technology helps streamline information into the 2-year timeframes with 90 day permitting while also reducing the cost of NEPA permitting
 1. Ex: MI I-75 project where they looked at the conservation plans for the corridor and scored the resources while also developing a GIS map and validated the data and developed a programmatic mitigation plan in

order to receive credit for their plan; they shared this plan with the public and determined there was \$1Bn savings from efficiencies in permitting

2. Ex: Atlanta Regional used the Ecological approach to determine a new set of economic development areas
3. The “red book” is used as a “how to” for coordination to look at the data and the permitting process to determine time efficiencies
4. Ex: California’s AB 2086 or 2087 allows for set up of regional conservation strategy as well as an investment strategy
5. The federal program is a reimbursement program such that funding is still required for initial investment
6. Area for improvement: Eco-Logical needs to be further institutionalized
7. Potential for building in a middle ground amount of data for wildlife conservation beyond current capabilities of Eco-Logical and the “red book” (that does not impact price)
 - a. Ex: Chesapeake Bay model of buying different quality and size areas for watershed restoration

- ii. Need for leadership in overseeing work in spatial planning as well as collaboration (could be filled by NFWF or something like it)

- e. Need for a base of information for projects to develop like the Desert Renewable Energy Plan; gathering small scale information (ex: single species, single area) stitched together into a larger map (ex: multi-species)
 - i. Issue of timing creates lost opportunities (changes in price in property values, loss of species, etc.)
- f. Fast 41 Dashboard Program
 - i. Implementation of Exec. Order 13807 with the goal of agencies to develop implementation plan and an improved means of coordinating mitigation plan decisions (such mitigation decisions have previously been referred to as extortion)
 - ii. Education and promotion of successful tools is needed
 - iii. Potential for dialogue with bringing in a new chair regarding strategies for the executive order
 - iv. CEQ’s role in coordination will remain the same and they are currently focused on streamlining efficiencies as the current goal (a lot of time is not needed on the development of MOUs)
 - v. Potential meeting with members here, CEQ, and Executive Office of the President once further information is gathered in July
 1. Perhaps developing an Outline/ Table of Contents of Book for review at this meeting would be useful
- g. WGA was developing a map of corridors across the U.S. which was then passed to WAFWA

4. Private Finance/Investment

- a. As governmental financing becomes more difficult, looking at private equity is incredibly important; in the past investments were not made due to the uncertainties
- b. Ex: TNC's shift and broadening of its way of working: Systematizing conservation with assurances to investors (in the past the federal government has provided such assurances)
- c. Story map in biological terms over the life of a 75 year incidental take used to engage investors and communities
- d. Private sector is looking for an asset that is definable, valuable, and invested in by many investors to reduce the risk
 - i. Ex: MD and PA are allowing trade of pounds of Nitrogen or Phosphorus sediment which can be sold as a commodity to private investors and the state which is more effective and less expensive (this model is driven by the fact that the government is backing it/providing an assurance)
 - ii. Ex: DC setting a floor price for water quality credits such that investors can start building and supplying credits (development of supply and mitigation that fits multiple policy objectives)
- e. Ex: Avoided pollution is now recognized as a credit
- f. Ex (generation of credits for species conservation): There was a need for conservation of freshwater orange shell mussels in the desert in SE New Mexico and Western Texas; the organization was attempting to locate funding for this particular species existing in a relatively small area however there were a low number of stakeholders and therefore a low amount of interest and funding; began looking at a larger landscape for conservation (includes a variety of species needing protection) which attracted a greater number of oil and natural gas companies (turned \$1.7M into \$5M on an annual basis); NRCS and FWS programs and partnerships involved
- g. Ex: NFWF is a partner with Occidental providing a level of credibility in coordination with regulatory agencies; a large amount of funding comes through federal and state funds (2/3 of funding) and private funds (1/3 of funding)
- h. DRECP in CA received 10,000 comment on their draft ERI/EIS depicting the fact that they did not appropriately approach the counties to get the support needed
 - i. BLM developed its own plan independent of the DRECP
- i. EDF (Dan Kaiser): RCIS Habitat Exchanges
 - i. Goal of facilitating flood projects to advance species protection with local and state cost-shares working with landowners to participate in conservation and mitigation in the Central CA Valley
 - ii. Habitat quantification tools were used to determine the values of the assets in the area
 - iii. Local and state flood planning agencies can take advantage of this information and reaches out to the community to seek interest in enrollment process for habitat exchanges/opportunities for restoration and species protection
 - iv. RCIS mitigation program funded by the Windward Fund

- v. CA Fish and Wildlife is requiring sponsors to report to them on their mitigation credit agreements
- vi. State infrastructure agencies can sponsor such credits and this does not count against the cap

5. WGA

- a. First step regarding financing/funding: implementing stakeholder recommendations through survey of stakeholders regarding where limited funds could be best deployed and where additional funding could be leveraged with a particular purpose (broad scale impact prevention, management of lands that are conserved, etc.)
- b. Also looking to develop an inventory of conservation funding sources including how much funding is required and where on the ground the funding is going
- c. Overall goal of being aggressively forward-looking rather than trying to solve emergencies when they come
- d. WGA was developing a map of corridors across the U.S. which was then passed to WAFWA

6. Review of Outline of Book:

- a. *Introduction and Overview: Collaboration in Governance and Funding in addressing Wildlife Habitat Conservation in anticipation of Infrastructure and Other Development.* (Marsh, Wheeler, Scarlett, Bean)
- Framing the book with objectives including stage setting as well as what we are trying to provide guidance on for the reader
- Target Audience: federal and state policy makers, agencies, congress
- Goal: achieve landscape-scale conservation (increasing efficiencies)
 - o Book to serve as a “practice guide”
- b. *Recent History: Wildlife Habitat Conservation in the United States.* (Bean, Zippin, Korte, Li)
- c. Possible Case Studies:
 - i. *Delaware River Watershed and Chesapeake Bay; Florida: the Everglades and South Florida:* (Draper/Murley).
 - ii. *California: HCPs, NCCPs, Lake Tahoe, Bay/Delta, DRECP, and the Coast:* (Marsh, Wheeler,)
 - iii. *Texas: the Hill Country, Edwards Aquifer:* (Sciara, Lederman, ____)
 - iv. *The Plains: Montana, Idaho, Wyoming, Colorado, Nevada, Arizona:* (Lyons, Quarles, ____)
 - v. *The North Coast: Washington and Oregon:* (Kraft?)
 - vi. *The Colorado River:* ()
- Use a proactive approach rather than a historical approach for case studies; focusing on what was learned from a situation
 - o DRECP example to understand cause of failure
 - o Inclusion of Bay Delta, some of the HCPs, and difficult mitigations as learning lessons
- Case Study of Corporate Accountability to shareholders (moving beyond regulatory assurances in conservation agreements and instead providing a shareholder assurance)
 - d. *The Role and Function of Information Technology:* (Stritholt, ESRI)

- Crowd-sourcing information without letting the bottom-level know that the information and technology is being used at a national level while still specializing the maps to the local landscape (building a framework to put together thousands of maps)
- Adding in a section on information infrastructure
- Include relevant information on the DATA Act
 - e. *Funding and Financing: (Wachs, Lieberman, Sciara)*
- Using NFWF as an intermediary?
- Need to determine which financing schemes will be covered
 - f. *Governance: (Marsh, Wheeler, Comacho, Korte)*
 - g. *Moving Forward: (Marsh, Wheeler, Scarlett)*
- Things to consider and questions to be answered for the book:
 - An understanding of research necessary to understand the lands and environment involved (varies by ecosystems)
 - Articulation of information so that is usable
 - Who does the planning? How does it relate to our government structure?
 - How do we fund it? Funding of plan creation as well as the various other stages? How do you deal with the interests in those lands depending on the type of land (BLM, farm etc.)?
 - In which phases are the nature of the lands determined?
 - Changing the legal structure of the ownership and interests in the land to be aligned to implement the plan (Contractual arrangements regarding managing activities)
 - Basic ownership and management of land to implement the plan
 - Is it valuable to have a coordinator/leader? Who will fill this function (national, state, local)? How is the mapping going to be validated?
 - Succession planning when changes in leadership or programs occur?
 - Conservation policy aspect (in the absence of a federal policy) for encouraging stakeholder involvement in the process (developing broad consensus/prescription of objectives that is independent of government)
 - reducing uncertainty for investors
 - emphasizing importance of mitigation in order to do conservation; suggesting more robust codification of mitigation for Congress
 - Creation of a new topic section called “Accounting for Results” through monitoring and measurement
 - Corporate Enterprise Performance Management with Key Performance Indicators
 - Use Sage Grouse as a “lessons learned” and do a diagnostic (look at large landscape issues over many years) in order to create an effective strategy
 - Under the ESG concept, looking at ecological, social, and economic aspects

7. Jim Murley: Collaborative Conservation and Resiliency Planning

- a. Early HCPs were breaking down the barriers
- b. Focus on sea level rise and other topics not directly related to habitat conservation
- c. No structure looking at intergovernmental, spatial, and time constraints and changes in the landscape
- d. Adaptation Planning Areas

- e. Issues with emergency funding and response group work need to be improved for resiliency and success in the future by looking forward

Next Steps:

- Jim, Doug, and Lindell to help put together a revised outline
- Potential Meeting in July if it is not too ambitious to review revised outline with members of this meeting, CEQ, and Executive Office of the President?

To: Greg Walcher [REDACTED] (b)(6)]
From: Greg Walcher
Sent: 2018-06-15T09:46:49-04:00
Importance: Normal
Subject: [EXTERNAL] Paying for critters?
Received: 2018-06-15T09:46:57-04:00
My Kingdom for a Razorback Sucker.pdf

Instead of using endangered species as a tool to regulate land uses, what if we just pay people to raise them? Check out this column on the subject, and as always, feel free to quote from, repost, or forward it as you wish. Or at least smile while deleting it. Cheers!

GW

[http://gregwalcher.com/2018/06/01/my kingdom for a razorback sucker/](http://gregwalcher.com/2018/06/01/my-kingdom-for-a-razorback-sucker/)

Greg E. Walcher
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Website: www.GregWalcher.com

Resources and Reality

Greg Walcher, Natural Resources Group

My Kingdom for a Razorback Sucker

On the classic game show, “Let’s Make a Deal,” the host Monte Hall walked down the aisle offering ridiculous amounts of cash for people to produce obscure items from their pockets \$500 for a skeleton key, for example. Cash is a powerful incentive, so people always showed up with pockets full of obscure items.

Interior Department officials should contemplate a similar program today, perhaps not as entertaining but equally effective. We’ll pay \$5,000 each for polar bears, and \$1,000 to anyone with a Preble’s Meadow jumping mouse. How about \$2,000 for a California condor, and even more for a gray wolf. If you want to run a hatchery, we could pay \$13,475 each for Colorado River pikeminnow, humpback chub, or razorback sucker.



This modest proposal is just like putting a bounty on certain species (which our government has done before), except this program would pay for healthy live animals, not dead ones. We spend lots of money worrying about roughly 2,000 threatened and endangered species across the country. We have management committees, biology studies, public hearings, documents tens of thousands of documents lawsuits, appeals, congressional oversight hearings, websites, blogs, and an entire industry of non-profit organizations raising money, and providing jobs for thousands of activists. Of course, the plants, animals, fish, and birds are completely unaware of all this activity on their behalf. But if there were suddenly lots more of their species, they would certainly notice.

The government has always vehemently opposed the idea of paying people to produce endangered species. That’s not because they don’t care about recovering the species, just that they care a lot more about studies, meetings, and committees. Those produce jobs and budgets; fish do not. But if you wonder how we could pay as much as \$13,475 each for the Colorado River endangered fish, consider that we have already done so. We just don’t have the fish to show for it.

Since its inception in 1989, the Colorado River Endangered Fish Recovery Program has raised and spent roughly \$380 million. Unlike many endangered species, the government has actually published specific recovery goals (de-listing criteria) for those fish, so success is clearly defined. In addition to habitat, water flow, and legal protection, there are explicit fish population criteria.

We need 11,600 razorback suckers, 8,800 bonytail chubs, 4,200 humpback chubs, and 3,600 pikeminnow. If we had spent that \$380 million simply to purchase the fish, we would be celebrating one of the great success stories in the history of conservation. Instead, we spent almost all of it on meetings and documents. Some fish have been restocked, mostly by State programs, so the government is finally reassessing the status of the fish. Congress reauthorized the Program (and the money) through 2023, though, so there is no chance of earlier de-listing.

Maybe buying endangered species sounds too non-governmental, too free-market private-enterprise. But in managing habitat, it is an easier idea to grasp. That's because the vast majority of critical habitat for most endangered species is on private land. So, we need partnerships with landowners to have much hope of success. To date, they've had little incentive for cooperation. An endangered species discovered on someone's land triggers a federal system that threatens the use of that land, so many owners want nothing to do with such species. "Shoot, shovel, and shut up" is not a joke; it is policy for many landowners. But what if we reverse the incentives?

The American Prairie Reserve, working to create the nation's largest wildlife preserve in Montana, has utilized many creative ideas to enlist landowner participation. One that has the attention of wildlife managers across the country is the installation of wildlife cameras on private ranches. The project pays ranchers cash for any pictures of various species thus "captured." Such a simple idea is turning decades of disincentives upside down.

States often pay ranchers for the impact of wildlife on their operations: game damage claims to ranchers whose haystacks are eaten by deer, or predation damage when introduced wolves kill livestock. But those programs are based on later compensation, like punitive damages. Some states also give ranchers a few hunting permits they can sell for guided hunts on their land, but many states still don't allow even that incentive.

For most landowners, there is no real economic value in the wildlife itself. The camera project is one way of changing that, encouraging the best habitat management by offering direct payments for otherwise threatened species — \$1000 for a grizzly bear, for example. As Monte Hall demonstrated, self-interest is a potent motivator, so ranchers are responding as expected: let's make that deal.



A version of this column appeared in the Grand Junction Daily Sentinel May 25, 2018.

Greg Walcher is president of the Natural Resources Group and author of "Smoking Them Out: The Theft of the Environment and How to Take it Back," now in its second printing. He is a former head of the Colorado Department of Natural Resources.

More information: www.GregWalcher.com

To: Brian Kelly[bkelly@bkstrategies.com]; Skipwith Aurelia[aurelia_skipwith@ios.doi.gov]; Mennel, John (US - Arlington)[jmennel@deloitte.com]; Gracie, Matthew (US - McLean)[magracie@deloitte.com]
From: Cassidy, John Kenneth (US - Arlington)
Sent: 2018-06-15T14:25:05-04:00
Importance: Normal
Subject: [EXTERNAL] RE: Follow up meeting with Susan and Aurelia on ESA
Received: 2018-06-15T14:26:21-04:00

Hi Aurelia - hope you're well. I left you VM a few minutes ago to see if we can get on your calendar for Tuesday/Wednesday of next week as a follow-up to our reg explorer discussion last week. It would be helpful to get your feedback as we prepare for the meeting with Susan.

Can you give me a call back (202-420-0243) or shoot me a note with some times you're available.

Have a good weekend.

Regards,
John

-----Original Message-----

From: Brian Kelly <bkelly@bkstrategies.com>
Sent: Monday, June 11, 2018 3:45 PM
To: Skipwith Aurelia <aurelia_skipwith@ios.doi.gov>; Mennel, John (US - Arlington) <jmennel@deloitte.com>; Gracie, Matthew (US - McLean) <magracie@deloitte.com>; Cassidy, John Kenneth (US - Arlington) <jocassidy@deloitte.com>
Subject: Follow up meeting with Susan and Aurelia on ESA

Aurelia

Per our last conversation wanted to see if we could get on yours and Susan's calendar for Monday the 18th.

Look forward to seeing you soon.

Brian Kelly

(b)(6)

This message (including any attachments) contains confidential information intended for a specific individual and purpose, and is protected by law. If you are not the intended recipient, you should delete this message and any disclosure, copying, or distribution of this message, or the taking of any action based on it, by you is strictly prohibited.

v.E.1

To: Skipwith, Aurelia[aurelia_skipwith@ios.doi.gov]
Cc: Cassidy, John Kenneth (US - Arlington)[jocassidy@deloitte.com]; Brian Kelly[bkelly@bkstrategies.com]; Gracie, Matthew (US - McLean)[magracie@deloitte.com]
From: Mennel, John (US - Arlington)
Sent: 2018-06-15T16:36:50-04:00
Importance: Normal
Subject: Re: [EXTERNAL] RE: Follow up meeting with Susan and Aurelia on ESA
Received: 2018-06-15T16:37:00-04:00

Hi Aurelia

Thanks for clarifying. We thought it was just a scheduling question but now understand you are not interested in moving ahead. Have a great weekend.

John

Sent from my iPhone

On Jun 15, 2018, at 4:15 PM, Skipwith, Aurelia <aurelia_skipwith@ios.doi.gov> wrote:

John,

I spoke with Brian yesterday and told him that Susan does not want to move forward with the project or have any further discussions about the tool.

Aurelia Skipwith

Deputy Assistant Secretary
for Fish and Wildlife and Parks

U.S. Department of Interior
1849 C Street, NW, Room 3148
Washington, DC 20240
(202) 208 5837

NOTE: *Every email I send or receive is subject to release under the Freedom of Information Act.*

On Fri, Jun 15, 2018 at 2:25 PM, Cassidy, John Kenneth (US - Arlington) <jocassidy@deloitte.com> wrote:

Hi Aurelia - hope you're well. I left you VM a few minutes ago to see if we can get on your calendar for Tuesday/Wednesday of next week as a follow-up to our reg explorer discussion last week. It would be helpful to get your feedback as we prepare for the meeting with Susan.

Can you give me a call back (202-420-0243) or shoot me a note with some times you're available.

Have a good weekend.

Regards,
John

-----Original Message-----

From: Brian Kelly <bkelly@bkstrategies.com>
Sent: Monday, June 11, 2018 3:45 PM
To: Skipwith Aurelia <aurelia_skipwith@ios.doi.gov>; Mennel, John (US - Arlington) <jmennel@deloitte.com>; Gracie, Matthew (US - McLean) <magracie@deloitte.com>; Cassidy, John Kenneth (US - Arlington) <jocassidy@deloitte.com>
Subject: Follow up meeting with Susan and Aurelia on ESA

Aurelia

Per our last conversation wanted to see if we could get on yours and Susan's calendar for Monday the 18th.

Look forward to seeing you soon.

Brian Kelly

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v.E.1

To: Aurelia Skipwith[aurelia_skipwith@ios.doi.gov]
From: Margaret Byfield
Sent: 2018-06-19T21:13:30-04:00
Importance: Normal
Subject: [EXTERNAL] Meetings
Received: 2018-06-19T21:13:37-04:00

Hi Aurelia,

Sorry it has taken me a while to get back to you on dates. We should be able to meet next week on the North Cascades Grizzly Bear and the Dunes Sagebrush Lizard. Were you able to find out when Greg would be available? Also, Alan Glen, our attorney working on the DSL suggested that Gary Fraizer also be invited to the DSL meeting.

Look forward to hearing from you, and as always, thanks for your help.

Margaret

To: Skipwith, Aurelia[aurelia_skipwith@ios.doi.gov]
From: Margaret Byfield
Sent: 2018-06-20T10:47:27-04:00
Importance: Normal
Subject: Re: [EXTERNAL] Meetings
Received: 2018-06-20T10:47:40-04:00

Hi Aurelia,

Thanks for getting these set up. Lets set the Wednesday at 1 pm meeting to discuss the Dunes Sagebrush Lizard issue. Attending this meeting would be:

Bud Brigham, President of Atlas Sand and Brigham Resources
Hunter Wallace, COO of Atlas Sand
Rich Fletcher, General Counsel of Atlas Sand
Alan Glen, Counsel with Nossaman
Amanda Aurora, Senior Biologist with SWCA
Margaret Byfield, Executive Director of American Stewards of Liberty

Alan knows Gary Fraizer and suggested he would be good to have in this meeting. I also think Kathy Benedetto would be good to have there if she is available. Would also appreciate Todd Wynn or Tim Williams perspective on this as well.

I am checking with the Chelan and Okanogan County, WA Commissioners to make sure the Tuesday meeting will work with them. I will get back to you on this.

Thanks so much for your help.

Margaret

On Jun 20, 2018, at 7:00 AM, Skipwith, Aurelia <aurelia_skipwith@ios.doi.gov> wrote:

Good morning Margaret,

I have scheduled 45 minute meetings for Tuesday at 10am and Wednesday at 1pm. Greg will be in attendance and I will extend an invitation to Gary. Can you please provide a list of attendees and topics for the Tuesday and Wednesday meetings? Thank you.

Aurelia Skipwith
Deputy Assistant Secretary
for Fish and Wildlife and Parks

U.S. Department of Interior
1849 C Street, NW, Room 3148
Washington, DC 20240
(202) 208 5837

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On Tue, Jun 19, 2018 at 9:13 PM, Margaret Byfield <margaret@americanstewards.us>

wrote:

Hi Aurelia,

Sorry it has taken me a while to get back to you on dates. We should be able to meet next week on the North Cascades Grizzly Bear and the Dunes Sagebrush Lizard. Were you able to find out when Greg would be available? Also, Alan Glen, our attorney working on the DSL suggested that Gary Fraizer also be invited to the DSL meeting.

Look forward to hearing from you, and as always, thanks for your help.

Margaret

To: aurelia_skipwith@ios.doi.gov[aurelia_skipwith@ios.doi.gov]
Cc: Gracie, Matthew (US - McLean)[magracie@deloitte.com]; Cassidy, John Kenneth (US - Arlington)[jocassidy@deloitte.com]
From: Mennel, John (US - Arlington)
Sent: 2018-06-20T11:04:13-04:00
Importance: Normal
Subject: [EXTERNAL] time on Monday? // Regulatory analysis -- ESA public comments
Received: 2018-06-20T11:04:33-04:00

Hi Aurelia,

It was good to see you just now. I wanted to check with you on a good time to meet so we can show you the initial analysis we have done in the reg reform tool on ESA. Matt has an interactive dashboard that will show the output of the public comment sample we analyzed. Could we arrange some time with you and John on Monday? We are pretty flexible that day.

Best,
John

John Mennel
Managing Director | Strategy
Deloitte Consulting LLP
1919 North Lynn St, Arlington, Virginia 22209
Tel/Direct: +1 571 814 6054 | Mobile: +1 214 208 7208
jmennel@deloitte.com | www.deloitte.com

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v.E.1

To: Skipwith, Aurelia[aurelia_skipwith@ios.doi.gov]
From: Margaret Byfield
Sent: 2018-06-21T09:40:08-04:00
Importance: Normal
Subject: Re: [EXTERNAL] Meetings
Received: 2018-06-21T09:40:20-04:00

Thank you, Aurelia. I have heard back from the WA Commissioners and they will not be able to get to DC in time for the Tuesday 10 am slot. It looks like we will need to look for a date after the 4th, unless later next week is available. I'm checking with them on later availability as well.

Will keep you posted.

Thanks for all your help on this.

Margaret

On Jun 21, 2018, at 8:44 AM, Skipwith, Aurelia <aurelia_skipwith@ios.doi.gov> wrote:

Margaret,

Wednesday's meeting will be in Room 3038. Also, just to let you know I am out of the office tomorrow.

Aurelia Skipwith

Deputy Assistant Secretary
for Fish and Wildlife and Parks

U.S. Department of Interior
1849 C Street, NW, Room 3148
Washington, DC 20240
(202) 208 5837

NOTE: *Every email I send or receive is subject to release under the Freedom of Information Act.*

On Wed, Jun 20, 2018 at 10:47 AM, Margaret Byfield <margaret@americanstewards.us> wrote:

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Hunter Wallace, COO of Atlas Sand
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Aurelia Skipwith

Deputy Assistant Secretary
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On Tue, Jun 19, 2018 at 9:13 PM, Margaret Byfield <margaret@americanstewards.us> wrote:

Hi Aurelia,

Sorry it has taken me a while to get back to you on dates. We should be able to meet next week on the North Cascades Grizzly Bear and the Dunes Sagebrush Lizard. Were you able to find out when Greg would be available? Also, Alan Glen, our attorney working on the DSL suggested that Gary Fraizer also be invited to the DSL meeting.

Look forward to hearing from you, and as always, thanks for your help.

Margaret

To: aurelia_skipwith@ios.doi.gov[aurelia_skipwith@ios.doi.gov]
From: Melinda Tomaino
Sent: 2018-06-22T10:27:42-04:00
Importance: Normal
Subject: [EXTERNAL] RE: FWS Presentation at AGC's Environmental Conf (Commercial Construction)
Received: 2018-06-22T10:27:52-04:00

Aurelia Skipwith,

Good morning. I want to thank you for your willingness to speak to the environmental professionals in the construction industry at our upcoming conference. Leah mentioned that you were going to need to go through a process before you could formally accept the invitation to speak. I wanted to give you some time to take those steps before I send you the conference details. Are you able at this time to confirm your participation? If so, then I'd love to be able to add your name to the schedule and gather your biographical information for the attendees.

Thank you for your consideration of this event.

Regards,
Melinda Tomaino

Melinda L. Tomaino, LEED® AP
Director, Environmental Services
The Associated General Contractors of America
2300 Wilson Boulevard, Suite 300
Arlington, VA 22201
Direct Phone - (703) 837-5415
Direct Fax - (703) 837-5401
tomainom@agc.org
www.agc.org
Twitter: [@AGCEnvironment](https://twitter.com/AGCEnvironment)
AGC-supported environmental compliance & green resources: www.cicacenter.org
Quality People. Quality Projects.



From: Leah Pilconis
Sent: Tuesday, June 05, 2018 10:28 AM
To: 'aurelia_skipwith@ios.doi.gov' <aurelia_skipwith@ios.doi.gov>
Cc: Melinda Tomaino <tomainom@agc.org>; Leah Pilconis <pilconisl@agc.org>
Subject: FWS Presentation at AGC's Environmental Conf (Commercial Construction)

Dear Aurelia –

It was a pleasure speaking with you this morning. As discussed, we would like to formally invite you to present at AGC's 2018 Construction Environmental Conference on September 12-13, in Crystal City, Virginia. We have time set aside an hour – from 10:00 to 11:00 AM – on Thursday, September 13 for an FWS update/overview. My colleague, Melinda Tomaino, director of AGC's environmental services, (copied on this email) is administering this conference; please keep an eye out for any follow-up emails from her – tomainom@agc.org / 703.837-5415 – and don't hesitate to reach out if you need more information.

Below is a short bulleted list of issues that are of interest to the commercial construction industry, but please feel free to share additional items that you want to bring to our attention. Some time at the end for questions would be great, too.

Attached please find the schedule of events, subject to change. You are welcome to join us for any part of the conference, as your schedule permits. As I mentioned, and as you can see from our conference Website at <http://meetings.agc.org/cec/>, a group of AGC in-house environmental managers will meet on September 11 for a day of roundtable discussions on *issues that they pick*. And following the conference, which I did not mention, our environmental Steering Committee (a smaller group), meets with federal agency staff to discuss regulatory/policy issues that are on the horizon. We have not set that agenda yet; perhaps we will identify a need for our 2 groups to meet to talk face-to-face about some of the topics below.

FWS ISSUES OF INTEREST TO AGC CONTRACTORS

- New DOI memorandum that the Migratory Bird Treaty Act (MBTA) does not prohibit incidental take. Also subsequent DOI guidance to assist agencies within the Department with implementation of the MBTA memo.
- FWS guidance memorandum addressing when an incidental take permit (ITP) may be needed under Section 10(a)(1)(B) of the Endangered Species Act for projects that modify habitat of federally listed species.
- The following FWS planned regulatory actions:
 - Clarify and improve rules governing interagency cooperation(link is **external**) related to Endangered Species Act Section 7 implementation.
 - Review and revise regulations for listing of species and for designation of critical habitat(link is **external**).
 - Update list of migratory birds(link is **external**).

Thank you again for your interest in AGC's 2018 Construction Environmental Conference. We very much look forward to your participation – and, most especially, to opening up the lines of communication with FWS.

Warm regards,

Leah

Leah F. Pilconis

Senior Counsel, Construction & Environmental Risk Management

The Associated General Contractors of America -- 2300 Wilson Blvd., Suite 300, Arlington, VA 22201

703.837.5332 | pilconis@agc.org | @AGCEnvironment | linkedin.com/in/LeahPilconis |

www.agc.org/environment



To: 'Skipwith, Aurelia'[aurelia_skipwith@ios.doi.gov]
From: Ann W Loomis
Sent: 2018-06-26T09:51:34-04:00
Importance: Normal
Subject: [EXTERNAL] Atlantic Coast Pipeline - FWS
Received: 2018-06-26T09:51:54-04:00

I would like to update you on the most recent decisions by FERC concerning the Atlantic Coast pipeline in light of waiting for FWS revisions to the Incidental Take Statement. I am available at your convenience for a phone call. I tried to call 202-208-5837, but that number did not work.

Thank you,

Ann

Ann Loomis | Vice President, Federal Affairs | Dominion Energy

400 N. Capitol Street, NW, Suite 875, Washington, DC 20001

202.585.4205 (o)

202.997.1849 (c)



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To: aurelia_skipwith@ios.doi.gov[aurelia_skipwith@ios.doi.gov]
Cc: greg_j_sheehan@fws.gov[greg_j_sheehan@fws.gov]
From: Margaret Byfield
Sent: 2018-06-27T06:38:06-04:00
Importance: Normal
Subject: [EXTERNAL] Re: Invitation: Meeting/Conference Call (FWS, FWP, Atlas Sand and group, ... @ Wed Jun 27, 2018 1pm - 2pm (EDT) (margaret@americanstewards.us)
Received: 2018-06-27T06:38:13-04:00

Good Morning, Aurelia:

We look forward to meeting with you today. I wanted to let you know that we have two additional people attending the meeting from our team. These are:

John Turner, CFO of Atlas Sands
Chad McEver, Sales Manager

Also, can you tell me which street entrance we should use to come into the building?

As always, I appreciate your help.

Warm regards,

Margaret Byfield

(b)(6) cell

On Jun 26, 2018, at 6:34 PM, [greg_j_sheehan@fws.gov](#) wrote:

[more details »](#)

Meeting/Conference Call (FWS, FWP, Atlas Sand and group, Region 2 via phone) to discuss the Dunes Sagebrush Lizard issue (Dial-in: (b)(5) -

(b)(5) Passcode: (b)(5) # - Rm 3038

When Wed Jun 27, 2018 1pm – 2pm Eastern Time

Where Conference Room 3038 ([map](#))

Video call (b)(5),(b)(6)

Calendar margaret@americanstewards.us

Who

- [greg_j_sheehan@fws.gov](#) organizer
- [thomas_irwin@fws.gov](#) creator
- [gary_frazer@fws.gov](#)
- [aurelia_skipwith@ios.doi.gov](#)
- [timothy_williams@ios.doi.gov](#)

- todd_wynn@ios.doi.gov
- amy_lueders@fws.gov
- ted_koch@fws.gov
- seth_willey@fws.gov
- kbenedetto@blm.gov
- stewart_jacks@fws.gov
- margaret@americanstewards.us
- kashyap_patel@fws.gov optional
- charisa_morris@fws.gov optional
- lois_wellman@fws.gov optional
- stacey_garcia@fws.gov optional

Attending this meeting would be:

Bud Brigham, President of Atlas Sand and Brigham Resources
Hunter Wallace, COO of Atlas Sand
Rich Fletcher, General Counsel of Atlas Sand
Alan Glen, Counsel with Nossaman
Amanda Aurora, Senior Biologist with SWCA
Margaret Byfield, Executive Director of American Stewards of Liberty

Aurelia Skipwith
Deputy Assistant Secretary
for Fish and Wildlife and Parks
(202) 208-5837

Going? [Yes](#) - [Maybe](#) - [No](#) [more options »](#)

Invitation from [Google Calendar](#)

You are receiving this courtesy email at the account margaret@americanstewards.us because you are an attendee of this event.

To stop receiving future updates for this event, decline this event. Alternatively you can sign up for a Google account at <https://www.google.com/calendar/> and control your notification settings for your entire calendar.

Forwarding this invitation could allow any recipient to modify your RSVP response. [Learn More](#).

<invite.ics>

To: Aurelia Skipwith[aurelia_skipwith@ios.doi.gov]
Cc: greg_j_sheehan@fws.gov[greg_j_sheehan@fws.gov]; Roslyn Sellars; Todd Wynn[todd_wynn@ios.doi.gov]
From: Margaret Byfield
Sent: 2018-06-27T07:25:30-04:00
Importance: Normal
Subject: Re: [EXTERNAL] Re: Invitation: Meeting/Conference Call (FWS, FWP, Atlas Sand and group, ... @ Wed Jun 27, 2018 1pm - 2pm (EDT) (margaret@americanstewards.us)
Received: 2018-06-27T07:25:37-04:00

Thank you.

On Jun 27, 2018, at 7:01 AM, Aurelia Skipwith <aurelia_skipwith@ios.doi.gov> wrote:

Margaret,

Thanks for the notice of the additional guests. You can use C Street Lobby. The meeting is in room 3038.

Aurelia Skipwith
Deputy Assistant Secretary
for Fish and Wildlife and Parks

U.S. Department of Interior
1849 C Street NW, Room 3148
Washington, DC 20240
202-208-5837

On Jun 27, 2018, at 6:38 AM, Margaret Byfield <margaret@americanstewards.us> wrote:

Good Morning, Aurelia:

We look forward to meeting with you today. I wanted to let you know that we have two additional people attending the meeting from our team. These are:

John Turner, CFO of Atlas Sands
Chad McEver, Sales Manager

Also, can you tell me which street entrance we should use to come into the building?

As always, I appreciate your help.

Warm regards,

Margaret Byfield

(b)(6) cell

On Jun 26, 2018, at 6:34 PM, greg_j_sheehan@fws.gov wrote:

[more details »](#)

Meeting/Conference Call (FWS, FWP, Atlas Sand and group, Region 2 via phone) to discuss the Dunes Sagebrush Lizard issue (Dial-in: (b)(5) Passcode: (b)(5) #) - Rm 3038

When Wed Jun 27, 2018 1pm – 2pm Eastern Time

Where Conference Room 3038 ([map](#))

Video call (b)(5),(b)(6)

Calendar margaret@americanstewards.us

Who

- greg_j_sheehan@fws.gov organizer
- thomas_irwin@fws.gov creator
- gary_frazer@fws.gov
- aurelia_skipwith@ios.doi.gov
- timothy_williams@ios.doi.gov
- todd_wynn@ios.doi.gov
- amy_lueders@fws.gov
- ted_koch@fws.gov
- seth_willey@fws.gov
- kbenedetto@blm.gov
- stewart_jacks@fws.gov
- margaret@americanstewards.us
- kashyap_patel@fws.gov optional
- charisa_morris@fws.gov optional
- lois_wellman@fws.gov optional
- stacey_garcia@fws.gov optional

Attending this meeting would be:

Bud Brigham, President of Atlas Sand and Brigham Resources
Hunter Wallace, COO of Atlas Sand
Rich Fletcher, General Counsel of Atlas Sand
Alan Glen, Counsel with Nossaman
Amanda Aurora, Senior Biologist with SWCA
Margaret Byfield, Executive Director of American Stewards of Liberty

Aurelia Skipwith
Deputy Assistant Secretary
for Fish and Wildlife and Parks
(202) 208-5837

Going? [Yes](#) - [Maybe](#) - [No](#) [more options »](#)

Invitation from [Google Calendar](#)

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Forwarding this invitation could allow any recipient to modify your RSVP response. [Learn More](#).

<invite.ics>

To: Skipwith, Aurelia[aurelia_skipwith@ios.doi.gov]
From: Gracie, Matthew (US - McLean)
Sent: 2018-06-27T09:37:24-04:00
Importance: Normal
Subject: Automatic reply: Re: [EXTERNAL] time on Monday? // Regulatory analysis -- ESA public comments
Received: 2018-06-27T09:37:31-04:00

I am overseas this week but will respond as soon as I can.

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v.E.1

To: Skipwith, Aurelia[aurelia_skipwith@ios.doi.gov]
From: Cassidy, John Kenneth (US - Arlington)
Sent: 2018-06-27T09:37:25-04:00
Importance: Normal
Subject: Automatic reply: Re: [EXTERNAL] time on Monday? // Regulatory analysis -- ESA public comments
Received: 2018-06-27T09:37:33-04:00

Hi, I'm traveling internationally from 6/25 - 6/29. Please text me at the number below if you need a response this week.

Regards,
John

202-420-0243

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v.E.1

To: greg_j_sheehan@fws.gov[greg_j_sheehan@fws.gov]

Cc: Aurelia Skipwith[aurelia_skipwith@ios.doi.gov]

From: Margaret Byfield

Sent: 2018-06-27T11:50:58-04:00

Importance: Normal

Subject: [EXTERNAL] Fwd: Packet Information

Received: 2018-06-27T11:51:50-04:00

Index.docx

Letter to Fish & Wildlife.pdf

Letter to Koch USFW re Atlas Conservation.pdf

Atlas Sand Cover Letter.pdf

Letter to Koch-90 Day.pdf

SWCA Protocol for DSL Presence-Absence Surveys v2 20180503.pdf

SWCA Protocol for DSL Habitat Assessments v2 20180503.pdf

SWCA-Atlas-1-Site-DSL-Habitat-Assessment-FINAL-20180122.pdf

Mining Plan of Operations 4.pdf

Mr. Sheehan,

Attached are the documents we will be referring to during our meeting on the DSL. I will be sending you an additional email with the PowerPoint file.

Warm regard,

Margaret Byfield

Get Outlook for iOS

From: Rick Fletcher <rfletcher@atlassand.com>

Sent: Tuesday, June 26, 2018 10:43 AM

To: Bud Brigham; Hunter Wallace; John Turner; Chad McEver; Margaret Byfield; Amanda L. Aurora; Glen, Alan M.

Cc: Chip Roy

Subject: Packet Information

All,

Attached you will find the information we will be handing to those we will be meeting with tomorrow. The only exception is the Power Point Presentation that is being finalized as we speak. I will forward that when available. As you can tell, the packet is rather substantial in terms of numbers of pages. I've printed 15 copies.

Rick Fletcher
General Counsel



**5914 W. Courtyard Drive, Suite 200
Austin, TX 78730
Office: 512-220-1200
Cell: (432) 559-9558**



May 7, 2018

Mr. Edward Koch
Assistant Regional Director, Ecological Services
U.S. Fish and Wildlife Service, Southwest Region
P.O. Box 1306
Albuquerque, New Mexico 87103-1306

RE: Atlas Sand's Continuing Efforts to Develop and Implement Best Practices for Conserving the Dunes Sagebrush Lizard

Dear Mr. Koch:

In April 2018, we shared with you a site-specific, dunes sagebrush lizard (*Sceloporus arenicolus*; DSL) habitat assessment for our Kermit Atlas 1 Site that demonstrated the lack of suitable DSL habitat on the site, and the outline of a DSL Research and Conservation Program for the Frac Sand Mining Industry ("Program") that we have begun to implement with SWCA Environmental Consultants. We are pleased to share with you the first set of conservation tools developed as part of this Program that standardize methods and level of effort for performing habitat assessment and presence/absence surveys for the DSL (the "Protocols," see attached).

The Protocols are designed to establish a reasonable and practicable level of due diligence for evaluating industrial sand mining sites for exposure to DSL and its habitat. The Protocols are tailored to the typical scale of industrial sand mining operations and the timing and pace of business decisions related to industrial sand mining. The Protocols apply the best available information regarding the life history, ecology, and habitat associations of the DSL, as well as on the extensive professional experience of SWCA's team of DSL experts.

While our studies on the Kermit Atlas 1 site pre-date these Protocols, this work (also performed by SWCA) is consistent with the methods and framework established in the Protocols. We have also begun to implement these Protocols on lands within our Monahans Site. Furthermore, Atlas Sand has shared both the Program and the Protocols with other frac sand miners and continues to coordinate with our peers operating in West Texas regarding these and other DSL conservation tools and best practices.

We look forward to receiving any feedback or suggestions from your or your biologists to further refine the Program and the Protocols. In the meantime, Atlas Sand and SWCA continue to develop other parts of the Program and will share additional DSL conservation tools and best practices with the



Service as they become available. We are hopeful that the Service will consider these efforts as demonstration of our commitment, and the commitment of the industry as a whole, to operate in a manner that respects the unique wildlife of the West Texas sand hills and ultimately benefits the conservation of the DSL. Please contact us with any questions or suggestions.

Sincerely,

A handwritten signature in black ink, appearing to read "B.M. Brigham".

Ben M. "Bud" Brigham
Chairman

cc: Mr. Chuck Ardizzone, USFWS Texas Ecological Services Field Office

Attachments:

- Protocol for Performing Site-specific Habitat Assessments for the Dunes Sagebrush Lizard (version 2, May 3, 2018)
- Protocol for Performing Presence/Absence Surveys for the Dunes Sagebrush Lizard (version 2, May 3, 2018)



TEXAS GENERAL LAND OFFICE
GEORGE P. BUSH, COMMISSIONER

March 8, 2018

Mr. Edward Koch
Assistant Regional Director, Ecological Services
U.S. Fish and Wildlife Service, Southwest Region
P.O. Box 1306
Albuquerque, NM 87103-1306

RE: Support of Atlas Sand's Mining Activities and Conservation Efforts in
Ward and Winkler Counties, Texas

Dear Mr. Koch:

The Texas General Land Office (GLO) manages state lands and mineral rights totaling 13 million acres, which include vast properties in West Texas, Gulf Coast beaches and bays and all "submerged" lands 10.3 miles out into the Gulf of Mexico. A primary responsibility of the GLO is to lease these lands for the benefit of the Permanent School Fund (PSF), an endowment fund established in 1876 for Texas public school education. This is our fiduciary responsibility.

The sand mining industry in the Permian Basin of West Texas is providing a new source of potential revenue to the PSF through the lease of lands managed by the GLO. Recently, we have been apprised of opposition to these activities over concern that mining may be impacting the habitat of the Dunes Sagebrush Lizard (DSL), a species removed as a candidate for federal protection in 2012.

My staff and I have been extremely active in the process and have continued to speak with landowners, oil and gas producers, and energy trade associations, including the Texas Oil and Gas Association and the Permian Basin Petroleum Association. I am writing to inform you that it is our belief, drawn from extensive discussions and written reports, studies and materials, that our lease holder, Atlas Sand, is conducting its operations in such a manner that not only will benefit the school children of the State of Texas, but the DSL as well.

The GLO must ensure activities on state lands are carried out in a manner that conserves and protects the State's natural resources. We diligently monitor the use of PSF land and require that all our lessees conduct their activities to the highest standards. Based on everything Atlas

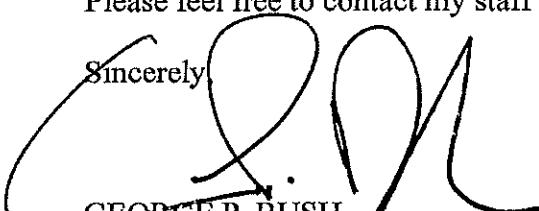
has submitted to our office, including their Plan of Operations, we believe that the company is proceeding with its mining activities while: (1) avoiding suitable DSL habitat; (2) creating a small mining footprint; (3) slowly moving across the landscape allowing for potential DSL habitat restoration projects as a part of the reclamation process; (4) including substantial DSL habitat set asides; and (5) making investments in science and conservation research.

We are aware that the Texas Comptroller's office has raised concerns regarding the activities of Atlas Sand, as well as other sand mining operations, as potentially impacting a mapped, but not proven, DSL habitat. The Comptroller provides a vital role as Administrator of the Texas Conservation Plan, which protects potential DSL habitats while allowing critical activities, such as oil and gas production, to continue. However, I am requesting that you work directly with Atlas to provide technical assistance that will ensure prudent development on PSF lands. I believe that Atlas has proven its willingness to pursue additional scientific study, and we encourage you to coordinate with Atlas on its conservation activities.

We look forward to working with you in order to ensure responsible development on PSF property that will not only benefit the school children of Texas, but the species as well.

Please feel free to contact my staff or me if we can be of assistance in any way.

Sincerely,



GEORGE P. BUSH

Commissioner, Texas General Land Office



May 31, 2018

Mr. Edward Koch
Assistant Regional Director, Ecological Services
U.S. Fish and Wildlife Service, Southwest Region
P.O. Box 1306
Albuquerque, New Mexico 87103-1306

RE: Consideration of Information from Atlas Sand and Others in Making a 90-day Finding on the Petition to List the Dunes Sagebrush Lizard

Dear Mr. Koch:

We understand that the Service received a petition from the Center for Biological Diversity and Defenders of Wildlife (Petitioners) on May 8, 2018, to list the dunes sagebrush lizard (*Sceloporus arenicolus*; DSL) as threatened or endangered under the Endangered Species Act and to designate critical habitat for the DSL. We also understand that receipt of such a petition initiates a process by which the Service finds, to the extent practicable within 90 days, whether or not the petition presents substantial scientific or commercial information indicating that the petitioned action may be warranted (Substantial Information). The Service's petition review regulations found at 50 C.F.R. 402.14 define Substantial Information" as "credible scientific or commercial information in support of the petition's claims such that a reasonable person conducting an impartial scientific review would conclude that the action proposed in the petition may be warranted. The petition review regulations direct the Service to base this 90-day finding on the information provided in the petition and other information that the Service has in its files.

The Petitioners assert that the DSL is currently at risk of extinction primarily due to supposed threats posed by the oil and gas and sand mining industries, and the supposed inadequacy of existing conservation programs, principally the Texas Conservation Plan (TCP) administered by the Texas Comptroller of Public Accounts (CPA). The Petitioners point the Service to an array of published scientific literature, agency reports (including those of the CPA), communications involving the Service and the CPA, and the Petitioners' own observations in support of their assertions.

We encourage the Service to review each of the Petitioners' assertions closely, as it appears that several important statements in the petition misinterpret the actual findings published in the scientific literature or portray suggestions about the implications of such findings as scientific facts themselves. These subtle misinterpretations of the actual scientific findings can be identified and resolved with a close review and critical reading of the body of published literature. The Service is well positioned to do this as it is in receipt of most, if not all, of the body of science and other information pertaining to the DSL. The Service recently undertook an extensive review of much of this information during its status of the DSL in 2012, concluding in a decision that listing was not warranted, and has continued to receive new research and information from the CPA as part of the reporting for the TCP since the 2012 "no-list" decision.

We also note that the Petitioners fail to present to the Service available information that clearly challenges their assertion that the DSL is at risk of extinction. Important among this missing information are data and analysis that the extent and characterization of potential DSL habitat in Texas, as previously characterized by the "Hibbitts Map" of the TCP and the initial attempt by Texas A&M University at modeling DSL habitat suitability (the "TAMU Model"), is demonstrably inaccurate. We previously submitted information to the Service from credentialed DSL experts that identifies and explains (in a general sense) the errors in these mapping efforts, and that offers more precise and accurate assessments of DSL habitat conditions on certain of our land holdings. For example, our site-specific assessment of DSL habitat on the Kermit Atlas 1 Site explains in detail why extensive open sand dunes—which are characterized by the Hibbitts Map and TAMU Model as "high suitability" habitat for the DSL—are in fact unsuitable for use by the DSL as they lack key components of habitat identified in the scientific literature. Therefore, characterizations in the petition of the extent of "impacts" to the DSL based on inaccurate maps of the extent and suitability of potential habitat should not be taken at face value, and instead warrant very careful review and consideration by the Service in light of the other information that the Service has in its files.

Finally, we urge the Service to carefully consider statements in the petition regarding the supposed "failure" of the TCP and other Candidate Conservation Agreements with Assurances (CCAs) to conserve the DSL. The Petitioners ascribe expectations to these CCAs that go beyond the intent of such agreements, either generally as a matter of policy or with respect to the specific provisions of the agreements themselves. Nor do the Petitioners acknowledge the actions of the sand mining industry, of which they are most certainly aware, to engage with the Service and the CPA on finding solutions to DSL conservation concerns, whether by entering the TCP when made possible or by independently working towards the adoption of best practices for the DSL that are compatible with the spirit of the TCP. Again, we point the Service to the information already in its files on these efforts.

We very much appreciate the opportunities the Service has presented to us and other stakeholders in West Texas to both advance the science regarding the DSL and to apply such science to the conservation of the species. We hope that the Service will carefully consider all of the information available to it during the petition review process and, on the basis of this information, we believe that there is a strong case for making a "not substantial" 90-day finding.

Sincerely,



Ben M. "Bud" Brigham
Chairman
Atlas Sand Company
5914 W. Courtyard Drive, Suite 200
Austin, TX 78730

cc: Ms. Amy Lueders, Regional Director, USFWS Region 2
Mr. Chuck Ardizzone, USFWS Texas Ecological Services Field Office
Mr. Glenn Hegar, Texas Comptroller of Public Accounts
Dr. Robert Gulley, Texas Comptroller of Public Accounts
Mr. George P. Bush, Texas General Land Office
Mr. Carter Smith, Texas Parks and Wildlife Department



Dunes Sagebrush Lizard Habitat Assessment for the Kermit Atlas 1 Site

Prepared for
Atlas Sand Company, LLC

Prepared by
SWCA Environmental Consultants

SWCA Project No. 45941

January 2018

DUNES SAGEBRUSH LIZARD HABITAT ASSESSMENT FOR THE KERMIT KERMIT ATLAS 1 SITE

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January 22, 2018

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APPENDICES

Appendix A. Photographic Log

1. INTRODUCTION

SWCA Environmental Consultants (SWCA) performed a habitat assessment for the dunes sagebrush lizard (*Sceloporus arenicolus*, the “DSL”) for Atlas Sand Company, LLC (Atlas Sand) on approximately 408 acres (the “Kermit Atlas 1 Site”). The Kermit Atlas 1 Site is located approximately 9 miles northeast of Kermit, Winkler County, Texas, and approximately 2.5 miles northwest of the intersection of Farm to Market (FM) 874 and State Highway (SH) 115. The region in which the Kermit Atlas 1 Site occurs is identified on U.S. Geological Survey topographic maps as the “Kermit Sand Hills.” Atlas Sand has begun construction of an operating plant and other preparations for mining within the Kermit Atlas 1 Site, which had disturbed approximately 81 acres as of November 29, 2017 (Bio-West 2017) (Figure 1).

This habitat assessment includes a review of the regulatory status of the DSL and the best available information on the biology, ecology, and habitat of the DSL. SWCA also provides a discussion of prior documented observations of the DSL and landscape-scale assessments of potential DSL habitat that pertain to the Kermit Atlas 1 Site. Finally, SWCA presents the methods, results, and discussion of our field assessment, the potential extent and quality of DSL habitat on the Kermit Atlas 1 Site, and the likelihood that DSL may use any such potential habitat for breeding, feeding, sheltering, or dispersal.

2. DUNES SAGEBRUSH LIZARD

2.1. Regulatory Status

Neither the U.S. Fish and Wildlife Service (USFWS) nor the State of Texas list the DSL as threatened or endangered. The USFWS does not currently identify the DSL as a candidate for future listing. The USFWS proposed to list the DSL as an endangered species in 2010 (75 FR 77801-77817), but withdrew the proposed listing rule in 2012 based on the implementation of conservation agreements in New Mexico and Texas (77 FR 36871-36899), including the 2012 *Texas Conservation Plan for the Dunes Sagebrush Lizard* (Texas Comptroller of Public Accounts 2012, the “TCP”). The U.S. Court of Appeals for the District of Columbia Circuit upheld the USFWS decision to withdraw the proposed DSL listing rule (Bravender 2016).

On October 20, 2017, environmental groups (Center for Biological Diversity and Defenders of Wildlife) provided notice to the Texas Comptroller of Public Accounts and other parties of their intention to file a new petition to list and designate critical habitat for the DSL under the federal Endangered Species Act (Nagano and Li 2017). As of the date of this writing, a petition has not been filed with the USFWS.

2.2. Biology and Life History

The DSL (Figure 2) is a small lizard that consumes a variety of arthropod prey. The daily activities of this diurnal species include foraging, thermoregulation, territory defense, predator avoidance, and mating. Laboratory and field studies suggest that peak daily and monthly activity periods for the DSL coincide with environmental temperatures (Sartorius et al. 2002; Texas A&M University [TAMU] 2016a). DSL are often observed in open areas, such as unvegetated or sparsely vegetated dune blowout slopes, during the morning hours. As temperatures rise in the afternoon, DSL are more frequently observed in shaded areas under vegetation, such as shinnery oak (*Quercus havardii*) or soapberry trees (*Sapindus saponaria*) (Sartorius et al. 2002). Surface temperatures above 104°F (40°C) are inhospitable for DSL, and the DSL avoids such conditions by burrowing under the sand or moving to shaded areas (Adolph and Porter 1993; Ferguson et al. 2014, TAMU 2016a). Consequently, the close juxtaposition of the components of DSL microhabitat (see Section 2.3) are important to DSL thermoregulation.

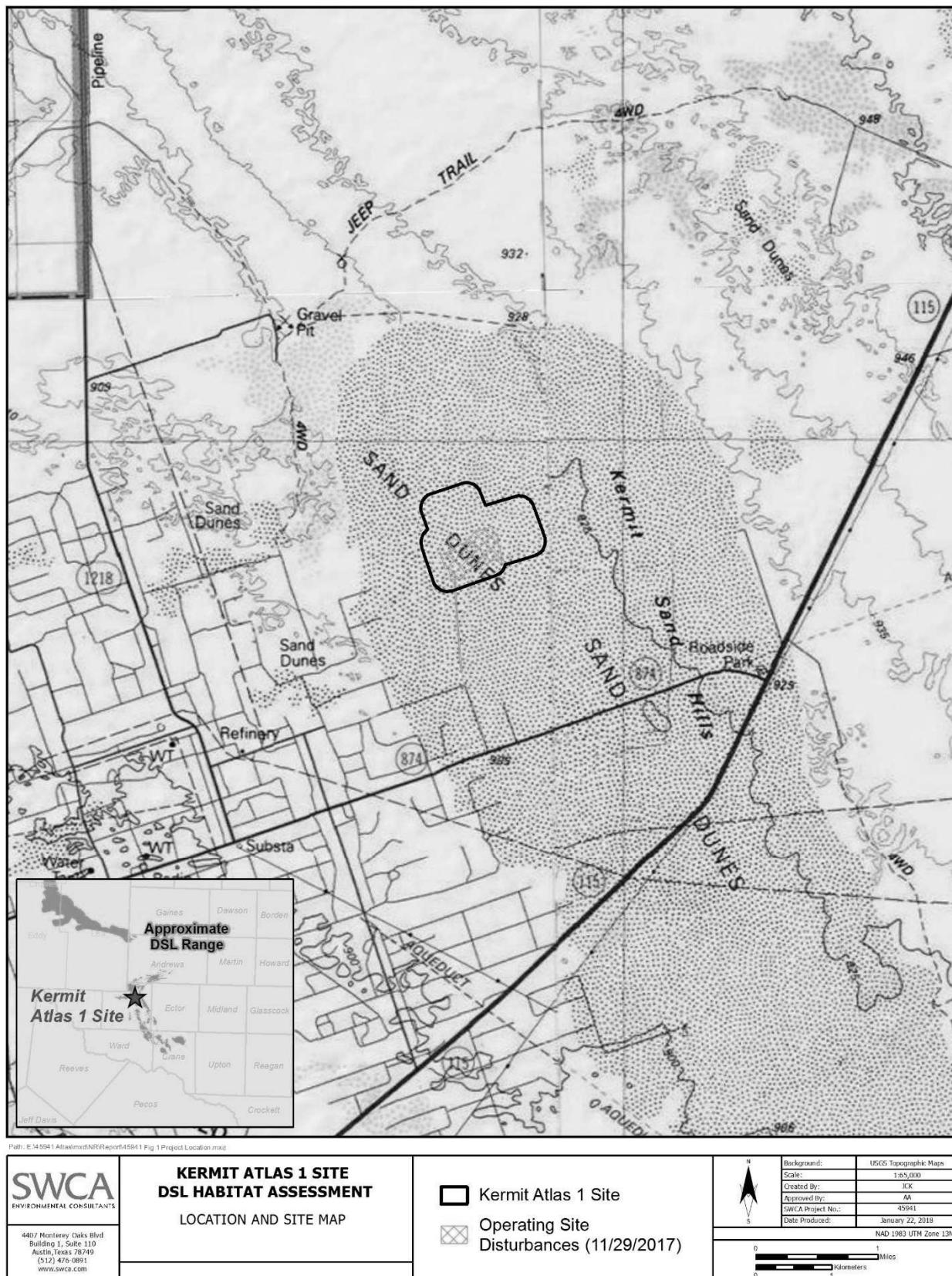


Figure 1. Location of the Atlas 1 Site.

Although DSL may be detected from February through November, and possibly even in December and January (published studies have not reported observations from these months), most adult DSL detections occur between May and July (TAMU 2016a). Mating occurs during this spring “active period,” with females laying between 1 and 2 clutches of 3 to 6 eggs in nests excavated on the slopes of dune blowouts at depths where moist sand is present. Such conditions are typically encountered approximately 7 inches below the surface (Hill and Fitzgerald 2007; Ryberg and Fitzgerald 2012). Incubation periods range from 53 to 62 days (Ryberg and Fitzgerald 2012). Thus, DSL hatchlings emerge from nests between mid-June and mid-September (Degenhardt et al. 1996; Fitzgerald and Painter 2009; Fitzgerald et al. 2012). As these hatchling grow to become juveniles, they become the dominant DSL demographic detected during the winter months (TAMU 2016a). Adults may go into a brumation state (e.g., a state analogous to hibernation in mammals) during the winter months (Fitzgerald et al. 2011 report this physiological response in other similar lizards), seeking shelter under sand and vegetation. This probable winter season behavior decreases the detectability of adults. Juvenile DSL appear to be more detectable during winter and may be less likely to enter brumation during the winter, possibly to meet a more urgent need to feed in preparation for the spring mating season. The estimated life span of the DSL is 3 to 4 years (Fitzgerald et al. 2012).

DSL are territorial and use home ranges that have been reported as covering between 0.01 to 0.7 acre (46.4 to 2,799.7 square meters), based on the areas of minimum convex polygons gleaned from radio-tracked individuals (Hill and Fitzgerald 2007; TAMU 2016b). DSL home ranges were larger in “fragmented” landscapes with high levels of oil and gas development and the occurrence of caliche well pads and access roads (TAMU 2016b). Home ranges may overlap where multiple individuals use the same dune blowout (Hill and Fitzgerald 2007). The mean distance of daily DSL movement in radio-tracking studies by TAMU (2016b) varied between 25 and 148 feet (7.65 and 45 meters) per day. TAMU (2016b) also reports DSL movement data from a large-scale pitfall trapping study, with recorded displacements of marked and recaptured individuals ranging between an average of 62 feet (18.9 meters) for females and 83 feet (25.2 meters) for males.

Beyond daily movements within home ranges, DSL also occasionally disperse longer distances across the landscape. For instance, female DSL are known to migrate outside of their home ranges for nesting, but return to their normal home range after laying eggs (Hill and Fitzgerald 2007). The TAMU (2016b) pitfall trapping study recorded a maximum displacement of 1,127 feet (343.5 meters) between the first capture and last recapture of an individual DSL over several days. This pitfall trapping study recorded only 30 “long-distance” movements by DSL, defined as those movements greater than 370 feet (113 meters), among 812 recorded movement events, suggesting that such long-distance movements are rare (TAMU 2016b). Telemetry and mark-recapture studies indicate that juveniles and nesting females are the primary demographic groups that disperse from their natal sites (Fitzgerald et al. 2005; Hill and Fitzgerald 2007; TAMU 2016b).

Dispersal distances may be constrained by characteristics of the surfaces available to DSL (e.g., sand grain size or degree of compaction) (Fitzgerald et al. 1997; Ryberg and Fitzgerald 2014). For example telemetry, mark-recapture, and mesocosm studies demonstrate that DSL tend to avoid crossing caliche roads (Hibbitts et al. 2013; TAMU 2016b). Few movements of DSL have been recorded that cross over caliche roads or other similar surfaces. Researchers documented only 3 of 726 marked DSL individuals crossing a road in one pitfall trapping study and only 1 of 36 individuals observed crossing a road in a radio-tracking study (TAMU 2016b). In another study, only eight of 44 trials documented DSL movement across a caliche road (Hibbitts et al. 2017). Movements of DSL among disconnected patches of shinnery oak dune habitat have never been observed (Walkup et al. 2017). Thus, roads and other anthropogenic features may hinder dispersal.

Natural features of the landscape, such as the patchiness or connectivity of DSL habitat, may also influence dispersal. However, it is important to note that all of the currently published studies investigating DSL

movements involved study sites containing at least some shinnery oak sand dunes. Thus, all reported DSL dispersal movements have occurred in association with such habitat. Dispersal across or even deep into other habitats, such as broad expanses of open dunes, grassy dunes, scrub-shrublands (e.g., shinnery oak or mesquite flats), or grasslands are not documented in the published literature. Once shinnery oak dunes transition to flats, observations of DSL decline, observations are more likely to be of juveniles, and individuals thus observed are unlikely to be recaptured in flat areas (TAMU 2016b). Instead, DSL captured in flats at the edge of shinnery oak dunes are likely to be recaptured, if at all, in larger blowouts within a dune complex. Both natural and anthropogenic habitat fragmentation may influence DSL dispersal, as indicated by patterns of genetic differentiation between populations in naturally and unnaturally fragmented habitat in New Mexico (Chan et al. 2009).



Figure 2. Dunes Sagebrush Lizard (*Sceloporus arenicolus*)

The dune-dwelling lizard community sympatric with the DSL includes 9 other species, such as the side-blotched lizard (*Uta stansburiana*), the lesser earless lizard (*Holbrookia maculata*), the Texas horned lizard (*Phrynosoma cornutum*), the prairie lizard (*Sceloporus consobrinus*), the collared lizard (*Crotaphytus collaris*), the long-nosed leopard lizard (*Gambelia wislizenii*), the marbled whiptail (*Aspidoscelis marmorata*), the six-lined racerunner (*A. sexlineata*), and the Great Plains skink (*Plestiodon obsoletus*). (Figure 3). The DSL is the only species endemic to the Mescalero-Monahans shinnery dunes system. The remaining species may be found in a variety of grassland, scrub-shrubland, or mixed communities (Jones and Lovich 2009). Of these 9 species, the side-blotched lizard and the DSL are the most common within the Mescalero-Monahans shinnery dunes system (Leavitt 2012, TAMU 2016b). A 3-year, mark-recapture study indicated that only two lizard species in this ecosystem (the DSL and the prairie lizard) have non-random associations with habitat features related to relative amounts of vegetative cover (Leavitt 2012). This study found that DSL is associated with dune blowouts and the prairie lizard is associated with shinnery oak flats (Leavitt 2012).

The side-blotched lizard and prairie lizard can sometimes be confused with the DSL when detections are based on fleeing individuals. Other lizard species within the dune systems share similar behaviors to DSL, such as burrowing in sand to escape threats (personal observation, Shelby Frizzell, SWCA). Consequently, experts verify the presence of DSL by capturing individuals to confirm morphological characteristics (e.g., scale counts) and the New Mexico Department of Game and Fish (NMDGF) recommends using pitfall trapping or (in some cases) “noosing” to document the presence of DSL, where captured individuals may be closely inspected and photographed (NMDGF 2012).



Figure 3. Sympatric Species That May Be Mistaken for DSL. Left: side-blotched lizard (*Uta stansburiana*), Right: prairie lizard (*Sceloporus consobrinus*).

2.3. Habitat and Habitat Use

The DSL is endemic to the Mescalero-Monahans shinnery dune systems in New Mexico and Texas (Fitzgerald et al. 2012). Within Texas, the known range of this species is limited to parts of Andrews, Gaines, Crane, Winkler, and Ward Counties that occur in the Mescalero-Monahans shinnery dune system (Fitzgerald et al. 2011). These dune systems contain wind-hollowed, bowl-shaped depressions commonly referred to as “blowouts.” Decades of research indicate a tight association between DSL and such blowouts (Sena 1985; Degenhardt et al. 1996; Fitzgerald et al. 1997; Fitzgerald et al. 2005; Fitzgerald and Smolensky 2011; Leavitt and Fitzgerald 2013; Hibbitts et al. 2013; Ryberg et al. 2014).

The Mescalero-Monahans shinnery dune system is composed of wind-driven sands and shrub-scrub vegetation frequently dominated by dwarfed shinnery oak (*Quercus havardii*) (Peterson and Boyd 1998; Griffith et al. 2007). The sand dunes are loose hills of sand formed by wind and contain hollowed out depressions called “blowouts” formed by the continuous removal of sand by wind (Figure 4a-b). The dunes are stabilized by deep-rooted vegetation like shinnery oak. Dunes, their blowouts, and the vegetation that encircle them form a close mosaic of microhabitats. This series of abutting dunes and related features is commonly referred to as a “dune complex,” and are patchily distributed in a matrix of flat areas dominated by shinnery oak or other woody or herbaceous scrub-shrub vegetation (Figure 4c). At the landscape scale, dune complexes may occur as a fragmented “chain” of dune complexes across the landscape (Figure 4d). Thus, the Mescalero-Monahans shinnery dune system is heterogeneous at multiple scales and organized in a hierarchy of landforms (Figure 4).

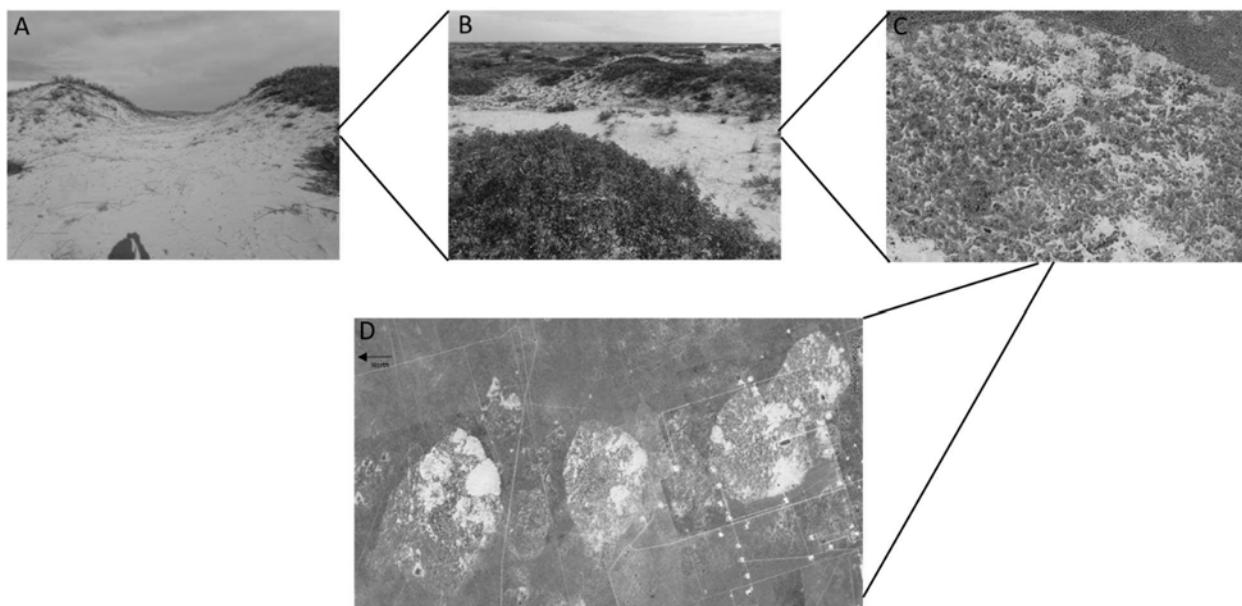


Photo Credit: A and B (SWCA), C and D (Google Earth 2017).

Figure 4. Multiples Scales of Suitable DSL Habitat: Two Shinnery Dunes with a Blowout (A), a Dune Complex (B and C), and a Chain of Dune Complexes (D).

The smallest spatial scale of DSL habitat consists of a dune, its associated blowout, and the vegetation within the dune (see Figure 4a). DSL have a strong association with blowouts, with positive correlations of DSL population sizes and blowout size, slope, shape, and some degree of soil compaction (Fitzgerald et al. 1997; Smolensky and Fitzgerald 2011; Ryberg et al. 2013). In other words, DSL appear to prefer large, deep (i.e., > 10 feet deep), steep blowouts with sparse vegetation inside the depression, surrounded by shinnery oak, and having soils that are neither too loose nor too compact (Fitzgerald et al. 1997; Fitzgerald et al. 2005; Hill and Fitzgerald 2007; Ryberg et al. 2012; Ryberg et al. 2013).

Sand texture is also an important microhabitat feature, with DSL occurring more often and nesting in moderately coarse sand (i.e., sand grains between 0.25 and 0.35 mm) relative to other sand textures present on the landscape (Fitzgerald et al. 1997; Ryberg et al. 2012). Preliminary studies of sand grain size and DSL use have hypothesized that subsurface breathing might be inhibited in fine grain sand or that areas of the fine grain sand become too compact to readily bury into (Ryberg et al. 2014).

While suitable habitat for individual DSLs occurs primarily at the scale of a single shinnery dune blowout, neighborhoods of DSLs use the interconnected dunes in a dune complex. Thus, DSL habitat is arranged in a spatial hierarchy with the next spatial level consisting of the dune complex (see Photos B and C in Figure 4), and in turn chains of dune complexes interspersed with shinnery oak flats across the shinnery dune system (see Photo D in Figure 4). Extensive chains of dune complexes with blowouts appear to be important for population persistence (Chan et al. 2009; Leavitt and Fitzgerald 2013; Ryberg et al. 2015; Ryberg et al. 2016). Isolated, shallow, small dune blowouts or small dune complexes are less likely to be used by DSL or sustain DSL populations (Fitzgerald et al. 1997; Smolensky and Fitzgerald 2011). Fitzgerald et al. (2011) noted disassociations between DSL detections and areas where mesquite (*Prosopis glandulosa*) is relatively common. Shallow blowouts or blowouts with extensive soil compaction, dense grass, or extensive leaf litter are also less likely to be used by DSL (Hibbitts et al. 2013).

Well pads and caliche or paved roads appear to be largely avoided by DSL. The reasons for such avoidance are unknown, but may be related to the characteristics of the soil such as coarseness or soil compaction, the absence of vegetation needed for thermoregulation and predator avoidance, or the inability to quickly bury

under the surface (Hibbitts et. al. 2013; Hibbitts et al. 2017; Leavitt 2012; Ryberg and Fitzgerald 2014). Over time, populations of DSL and other dune dwelling lizard species (e.g., lesser earless lizard) appear to decline in heavily fragmented habitats, as suggested from a variety of studies detecting reduced recruitment, lower diffusion rates (i.e., population spread), reduced detections and capture rates, and changes in lizard species composition in areas with extensive oil and gas development (Leavitt and Fitzgerald 2013; Ryberg et al. 2013; Smolensky and Fitzgerald 2011; TAMU 2016b; Walkup et al. 2017).

To date, research has consistently indicated that DSL occur in dune systems stabilized by shinnery oak, and are unlikely to be found in dune systems that lack shinnery oak, that are heavily vegetated by grasses or mesquite, or a combination thereof (Fitzgerald et al. 1997; Fitzgerald et al. 2011; Hibbitts et al. 2013; Ryberg et al. 2014).

2.4. Landscape-scale Habitat Maps and Models

2.4.1. TCP and the Hibbitts Map

The TCP is an agreement between the USFWS and the Texas Comptroller of Public Accounts “to facilitate continued and uninterrupted economic activity in the Permian Basin...and to promote conservation of the DSL...” in Texas (Texas Comptroller of Public Accounts 2012, pg 1). The TCP addresses potential impacts to the DSL from a variety of economic activities, including (but not limited to) oil and gas activities, agricultural activities, and general activities (such as hunting, off-highway vehicle use, general construction, and land management) (Texas Comptroller of Public Accounts 2012). Participation in the TCP is voluntary. Via participation, landowners receive regulatory assurances for impacts to the DSL should it become a federally threatened or endangered species in the future. Landowners may also participate in the TCP if they are seeking to generate conservation value benefitting the DSL. To streamline the assessment of impacts and mitigation for the DSL in the context of the TCP, the TCP adopted a delineation and classification of “DSL Habitat” developed by Dr. Toby Hibbitts of Texas A&M University (see Figure 1-2 of the TCP, the “Hibbitts Map”).

The Hibbitts Map identifies areas of “shinnery dunes habitat” and classifies these areas with a relative assessment of likelihood of occupancy by the DSL that ranges from “very high probability of occurrence” to “very low probability of occurrence” (Texas Comptroller of Public Accounts 2012). Dr. Hibbitts delineated and assigned the relative classes of likelihood of DSL occupancy to areas of shinnery dunes habitat using two criteria: 1) the extent and characteristics of shinnery dunes habitat as interpreted from aerial imagery and site information contained in some locality records; and 2) the locations of historic and recent DSL observations. For this purpose, recent DSL locality records were defined as those documented within the last 20 years (Texas Comptroller of Public Accounts 2012), or since 1991. The TCP states that “dune ‘complexes’ (expanses of the same geologic dune formation) could also be identified from aerial photography and, unless survey data was [sic] available to indicate otherwise, entire dune ‘complexes’ were considered the same likelihood of occurrence” (Texas Comptroller of Public Accounts 2012, Figure 1-2).

It is important to note that “DSL Habitat” in the TCP is a defined term specific to the TCP that both establishes the Permit Area for the TCP and coarsely approximates at a landscape scale “the baseline of habitat suitable for the DSL” in order to facilitate administration of the TCP (Texas Comptroller of Public Accounts 2012, Figure 1-2). Therefore, the TCP’s defined term “DSL Habitat” is not necessarily the same as DSL habitat in a biological sense, and the mapping of DSL Habitat to administer the TCP should not be confused with a delineation of actual DSL habitat or an assessment of habitat quality or suitability. The polygons of TCP DSL Habitat are approximations of dune complexes delineated from aerial imagery that may contain areas of habitat for the DSL, rather than a precise or site-specific delineation of habitat suitable for use by the DSL.

The TCP itself states that the geographic area of DSL Habitat captured by the Hibbitts Map includes areas of shinnery oak dune blowouts (areas where the TCP indicates that DSL are typically found) interspersed other areas of non-habitat for the DSL, such as development, crop land, and grassland (Texas Comptroller of Public Accounts 2012, pg 59). Elsewhere, the TCP notes that the “Hibbitts Map (Figure 1-2) needs additional survey and map refinement. It includes dispersal corridors and flats in the polygons. These are gross estimates” (Texas Comptroller of Public Accounts 2012, pg 61). Indeed, one specified focus of the TCP’s Adaptive Management program is “refining and validating DSL Habitat map(s), including dispersal corridors” (Texas Comptroller of Public Accounts 2012, pg 34). Follow-up work by Texas A&M University performed as part of the ongoing research program for the TCP, also acknowledges that “even within the broad categories of likelihood of occurrence, variation exists in quality of habitat that influences DSL occurrence and numbers at a given location” (TAMU 2016a, pg 88).

Fitzgerald et al. (2011), including Dr. Hibbitts as a co-author, published a technical report describing the range and distribution of the DSL in Texas, clarifying some aspects of the Hibbitts Map. Fitzgerald et al. (2011, pg 3) clarifies that “suitable habitat” for the DSL means “habitat of sufficient similarity to habitat at known localities that biologists consider it plausible that [the DSL] could occur there. [The DSL] may not occur in all areas of suitable habitat due to chance and the dynamic nature of extinction and colonization of suitable habitat through time.” Fitzgerald et al. (2011) also cautions that “the [likelihood of occurrence] categories are not classifications of habitat quality” (pg 6), that the Hibbitts Map is a delineation from a “landscape-scale” perspective (pg 13), and that “the map showing 4 categories of likelihood of occupancy was based on coarse criteria of known occupancy, historical occupancy, and obvious connectivity of shinnery dune areas” (pg 14). Fitzgerald et al. (2011) recommends “refinement of habitat occupancy maps as more information becomes available” (pg 14).

Therefore, given the specific purpose of the Hibbitts Map to streamline implementation of the TCP, the noted imprecision of the Hibbitts Map delineations, and the acknowledged need for refinement, the ability of the Hibbitts Map in its current form to accurately identify, delineate, and characterize suitable DSL habitat on specific properties should be viewed with extreme caution. This is particularly true when applying the Hibbitts Map at a site-specific scale, since the Hibbitts Map does not incorporate any site-specific information about dune structure, vegetation, sand texture, land use, or dispersal barriers.

2.4.2. 2016 Habitat Suitability Model

In response to observations that “detectability of the DSL was variable across the landscape, even in dark green areas where the likelihood of DSL occurrence is very high” and that “variation exists in quality of habitat that influences DSL occurrence and numbers at a given location” (TAMU 2016b, pg 90), Texas A&M University created a DSL Habitat Suitability Model to assess whether the Hibbitts Map “might be improved with greater precision” (TAMU 2016b, pg 90). The 2016 Habitat Suitability Model is intended to be a predictive tool to identify areas, at the scale of 400 meter x 400 meter resolution (an area of approximately 40 acres), where certain landscape variables associated with known DSL locations occur.

Texas A&M University (2016b) characterized 175 plots (each 400 meters x 400 meters) for landscape variables presumed to be important facets of DSL habitat: the amount of caliche, grass, mesquite, sand, and shinnery land cover in the plot; and the area, mean, and standard deviation of rugosity metrics for the plot derived from spatial processing of digital elevation models or Shuttle Radar Topography Mission data. The model was built from plots where TAMU performed surveys for DSL between 2011 and 2015, with presence or absence of the species in the plot used to calibrate model predictions of habitat suitability. Texas A&M University ultimately chose a model that incorporated the following landscape variables as significantly and positively associated with the presence of DSL: caliche, sand, shinnery, and mean rugosity (a fine-scale metric of topographic roughness). The model was then applied to another 11,466 “plots” comprising the remainder of the study area, bounded by the extent of presumably suitable soils and surface

geology within the Texas range of the DSL. Texas A&M University reports the output of the Habitat Suitability Model in a series of maps and in tabular calculations of model results in four category classes (i.e., very high – suitability values between 1.00 and 0.75; high – suitability values between 0.74 and 0.50, low – suitability values between 0.49 and 0.25, and very low – suitability values between 0.24 and 0.00) (TAMU 2016b).

We offer some critiques of the methodology for the 2016 Habitat Suitability Model that make the results and utility of this model suspect. First, Texas A&M University acknowledges that the presence of caliche in a plot was significantly and positively related to the presence of DSL in the plot, inflating the importance of caliche as an indicator of “suitable” DSL habitat. Other published research by scientists at Texas A&M University indicates that caliche on well pads or roads is not a suitable substrate for DSL and forms a barrier to dispersal across the landscape (Hibbitts et al. 2017). Contrary to published research, the Habitat Suitability Model identifies this form of land cover as a significantly positive indicator of DSL occurrence. Texas A&M University suggests that their classification of land cover types from remote sensing data was not able to adequately separate caliche from sand, and that many DSL survey plots found to be occupied by DSL contained caliche access roads. In any case, this discrepancy suggests that the methods used to create the model may not accurately characterize the elements of DSL habitat that are most important to the species.

Finally, we note that TAMU did not partition its database of surveyed DSL plots into those used for model development and those used for model verification. No verification of the model results was discussed in TAMU (2016b) and it is not known how this model performs with respect to sites with documented DSL presence or absence. Until verification is complete, and in consideration of the critiques mentioned above, the results of the 2016 Habitat Suitability Model should be interpreted as with caution as preliminary results. In any case, the authors of the 2016 Habitat Suitability Model also state that the “fine scale” results of the model do not appear to be more accurate in predicting the occupancy of DSL across the landscape than the coarsely delineated Hibbitts Map. However, we note that predicting the relative “suitability” of habitat is not the same as predicting the likelihood of occupancy of that area. There are many reasons why even highly suitable habitat (i.e., areas containing all or most of the key elements of habitat for a species) may not be occupied by the species, such as the presence of dispersal barriers within the broader landscape or the distribution and abundance of individuals of the species in the regional landscape.

In summary the Hibbitts Map and 2016 Habitat Suitability Model provide coarse assessments of the distribution of dune complexes in Texas that vary in their likelihood to contain DSL. Due to the coarseness of the spatial resolution of these assessments, site specific conclusions about the potential presences of DSL cannot and should not be made without field verification.

2.5. Available Occurrence Records

Records of DSL occurrence in Texas that are available for public review are sparse, with most available records comprising historic collections with imprecise locality descriptions. However, two databases provide limited information on the distribution of the DSL in Texas: Texas Natural Diversity Database (TXNDD) and the online database *Vertnet*.

The Texas Parks and Wildlife Department (TPWD) maintains the TXNDD. The TXNDD contains “Element Occurrence Records” (EORs) for species and communities tracked by the program. Each EOR defines a spatial location or area where one or more individual of the target resource has been documented by a reliable observer, such as TPWD staff or other government agency staff, reported specimen records, academic institutions, environmental consultants, or members of the naturalist community. EORs also contain information (as available) about the recorded occurrence, such as the date of observation, a

description of the location, the number of individuals observed, and the identity of the observer (TPWD 2017).

The spatial component of an EOR is represented by a polygon. This polygon is a combination of the geographic location of the reported observation, TPWD's interpretation of the uncertainty for the location, and (in some cases) the combined extent of multiple nearby records. In many cases, larger polygons represent EORs with greater uncertainty in the precision of the location information (TPWD 2018).

As of January 2, 2018, the TXNDD contained 7 EORs for the DSL representing occurrence records documented between 1970 and 2012 (TPWD 2018). However, the TXNDD gives the following disclaimer to its EORs (TPWD 2018):

The TXNDD is continually updated with information on statewide status and locations of these unique elements of natural diversity. However, the data are not complete, as there are gaps in coverage due to the lack of access to land or data and a lack of staff and resources to collect and process data on all rare and significant resources... Given the small proportion of public versus private land in Texas, the TXNDD does not include a representative inventory of rare resources in the state. Although it is based on the best data available to TPWD regarding rare species, these data cannot provide a definitive statement as to the presence, absence, or condition of special species, natural communities, or other significant features in any area. Nor can these data substitute for on-site evaluation by qualified biologists.

The online database *Vertnet* contains 185 records of DSL occurrences from Texas and New Mexico collected between 1938 and 2011 (*Vertnet* 2016). *Vertnet* records include information—to the extent available—regarding the date and location of the collection (including verbatim reporting of location data from the original collection record and interpreted geographic point coordinates of the verbatim data) and the identity of the collector. *Vertnet* also provides a map viewer that displays an approximate point location for records that contain sufficient geographic information.

3. DESKTOP REVIEW OF THE KERMIT ATLAS 1 SITE

SWCA reviewed historic and recent aerial imagery, topographic maps, vegetation mapping, Texas Railroad Commission oil and gas map records, prior assessments of DSL habitat (i.e., the Hibbitts Map and 2016 Habitat Suitability Model), and publicly available documented DSL occurrences (i.e., as reported in TXNDD and *Vertnet*) to understand the environmental context of the Kermit Atlas 1 Site with respect to its suitability for use by the DSL.

3.1. Land Use and Land Cover History

3.1.1. *Historic and Current Aerial Imagery*

Readily available aerial imagery of the Kermit Atlas 1 Site is available from the Texas Natural Resources Information System (TNRIS) from as early as 1996 (Texas Orthoimagery Program) and as late as 2016 (National Agriculture Imagery Program) (TNRIS 2018) (Figure 5 and Figure 6).

These images suggest that the Kermit Atlas 1 Site sits well within the interior of an active sand dune complex that exhibits either very little vegetation or primarily grassy vegetation. The early imagery shows somewhat broader grass distribution relative to the 2016 imagery. A close-scale view of this imagery reveals numerous off-highway vehicle tracks on the Kermit Atlas 1 Site, as well as across other parts of the

Kermit Sand Hills. Aerial imagery also illustrates the extent of oil and gas development in the vicinity. These images, which span a period of 20 years, show relatively few (if any) substantive physical improvements to or other changes of the overall condition of the Kermit Atlas 1 Site.

3.1.2. Mapped Vegetation Communities

The Texas Ecological Mapping Systems Database and identifies the following vegetation communities of the High Plains ecoregion on the Kermit Atlas 1 Site, with descriptions excerpted from Elliott (2014):

- **Sandhill Shinnery Duneland**—Shrubland on deep sand or sandhill sites where *Quercus havardii* (Havard's shin oak) is the dominant or at least makes up a significant portion of the cover. Other shrub species are also commonly encountered.
- **Sand Prairie**—This represents far southern outliers of this system which is best developed in Nebraska and South Dakota, and may in fact be a different system. These grasslands occupy deep sands and sandhills and are dominated by species such as *Sporobolus giganteus* (giant dropseed), *Sporobolus cryptandrus* (sand dropseed), *Andropogon hallii* (sand bluestem), *Andropogon gerardii* (big bluestem), *Schizachyrium scoparium* (little bluestem), *Paspalum setaceum* (thin paspalum), *Calamovilfa gigantea* (big sandreed), and *Cenchrus spinifex* (common sandbur). Some woody species may be present, including *Artemisia filifolia* (sand sage) and *Quercus havardii* (Havard's shin oak).
- **Active Sand Dunes**—Areas on deep sand and sandhill site types lacking significant vegetative cover.

The Kermit Atlas 1 Site is comprised mostly of Active Sand Dunes, with only a very small amount mapped as either Sand Prairie or Sandhill Shinnery Duneland (Figure 7).

3.1.3. Historic and Current Land Uses

The Kermit Atlas 1 Site was historically subject to unauthorized, off-highway vehicle use, the site being continuous with lands previously used as a county park and then a private park (i.e., the privately-owned dune buggy and amusement park known as The Dunes at Kermit or the Kermit Sand Hills). This parkland featured recreational uses, including camping, picnicking, and sand riding (Ivy 2017). No fencing or other barriers separate the Kermit Atlas 1 Site from the former park, and off-highway vehicle tracks are visible across the Kermit Atlas 1 Site.

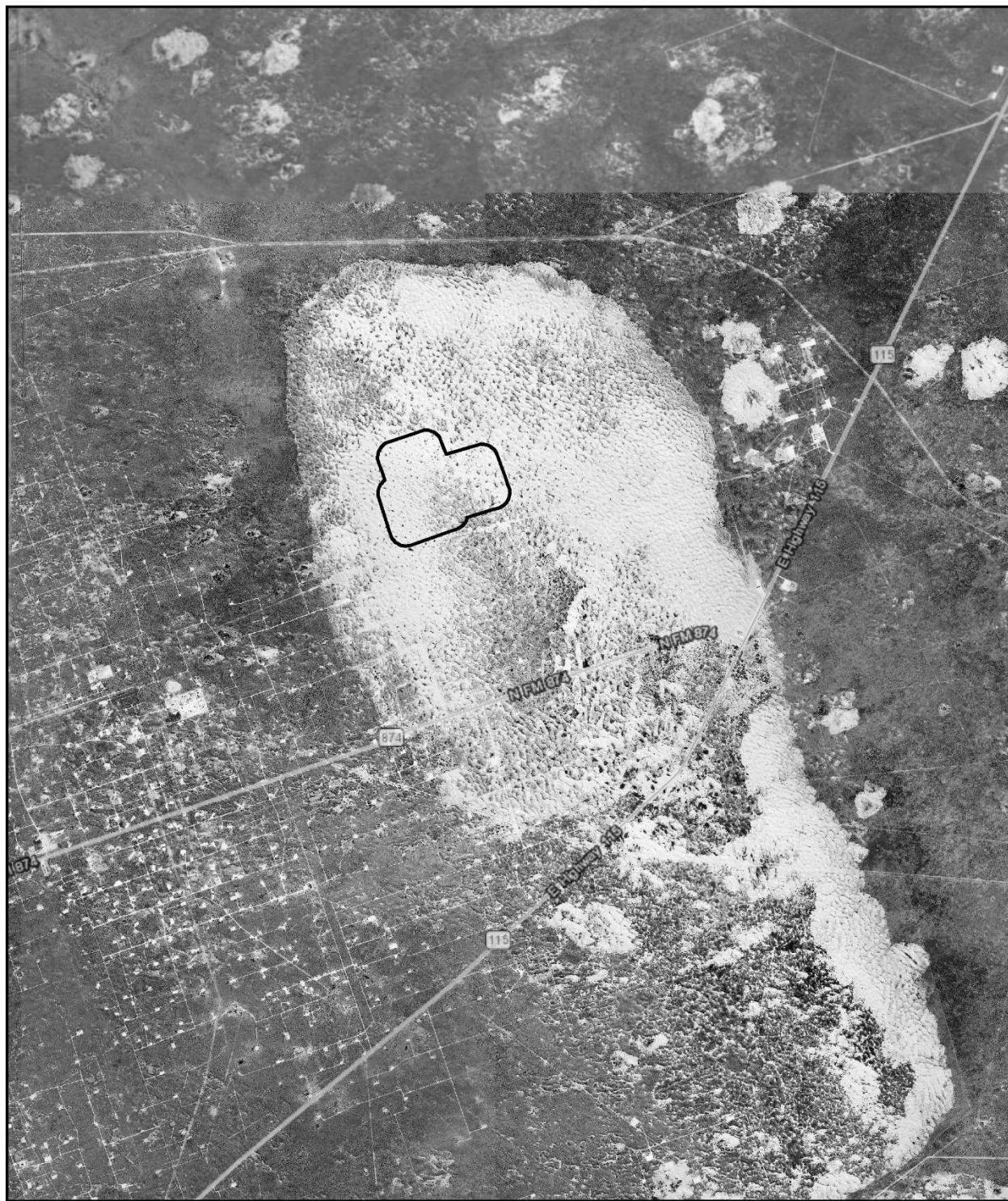
While no oil and gas development occurs within the Atlas 1 Site, substantial oil and gas development occurs to the west and south of the site (Figure 8).



Path: E:\45941\Atlas1\mx\NTG\Report\45941\FigX\1996 Texas Orthoimagery Map.mxd

SWCA ENVIRONMENTAL CONSULTANTS	KERMIT ATLAS 1 SITE DSL HABITAT ASSESSMENT	<input type="checkbox"/> Kermit Atlas 1 Site	Background: TNRIS
4407 Monterey Oaks Blvd Building 1, Suite 110 Austin, Texas 78750 (512) 476-0891 www.swca.com	1996 Texas Orthoimagery Program Aerial Imagery		Scale: 1:65,000
			Created By: KK
			Approved By: AA
			SWCA Project No.: 45941
			Date Produced: January 22, 2018
			NAD 1983 UTM Zone 13N
			
			0 1 Miles
			0 1 Kilometers

Figure 5. 1996 Texas Orthoimagery Program Aerial Imagery of the Kermit Atlas 1 Site.



Pub: E:\45941\Atlas\match\NRI\Report\45941 Fig X 2016 NAIP Aerial Imagery.indd

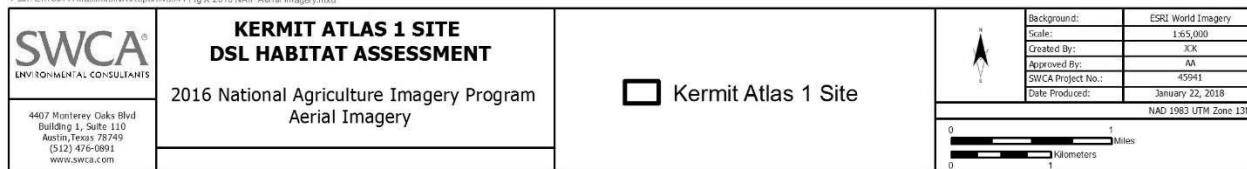


Figure 6. 2016 National Agriculture Imagery Program Aerial Imagery of the Kermit Atlas 1 Site.

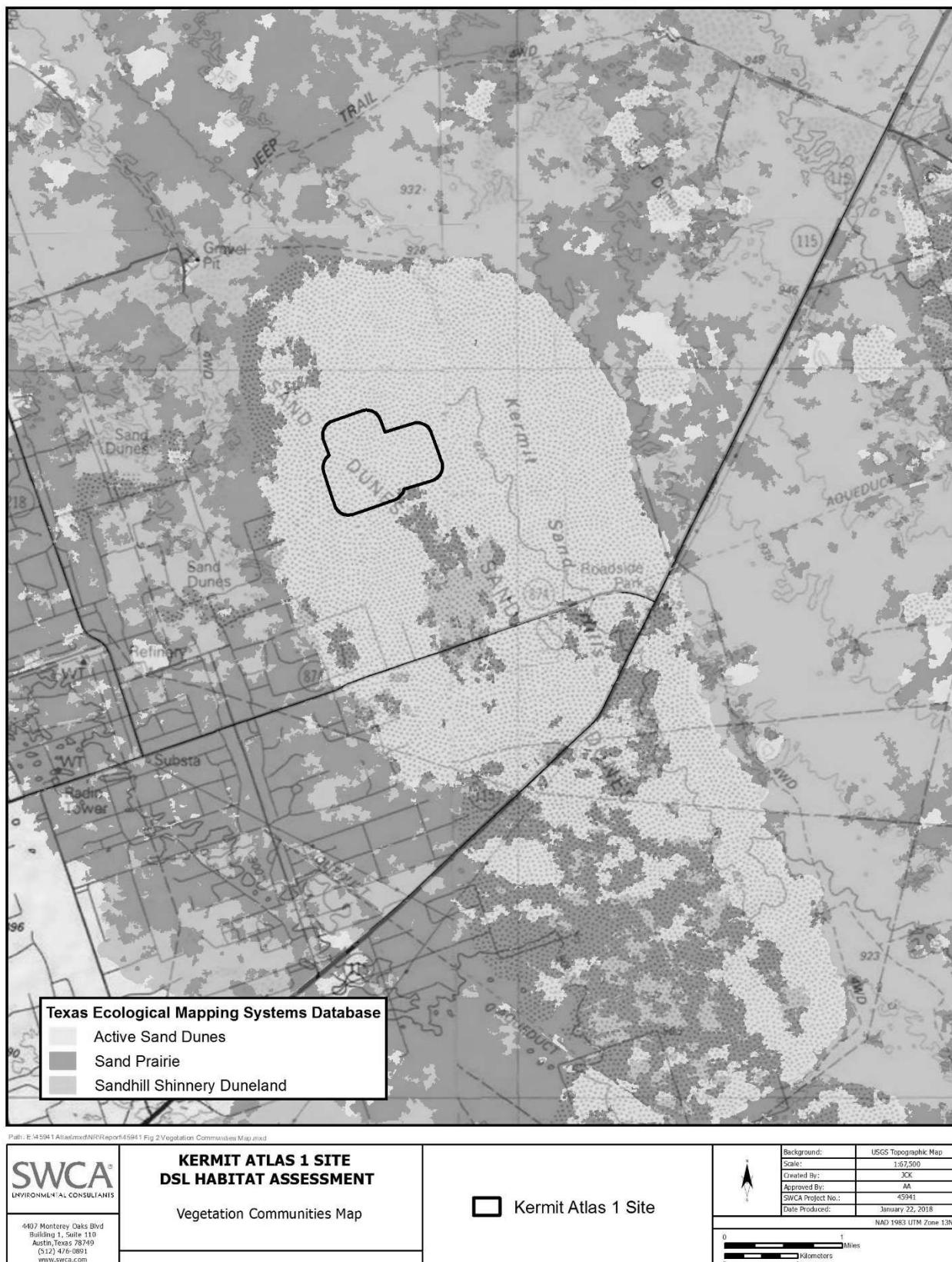


Figure 7. Texas Ecological Mapping Systems Database Vegetation Communities on the Kermit Atlas 1 Site.

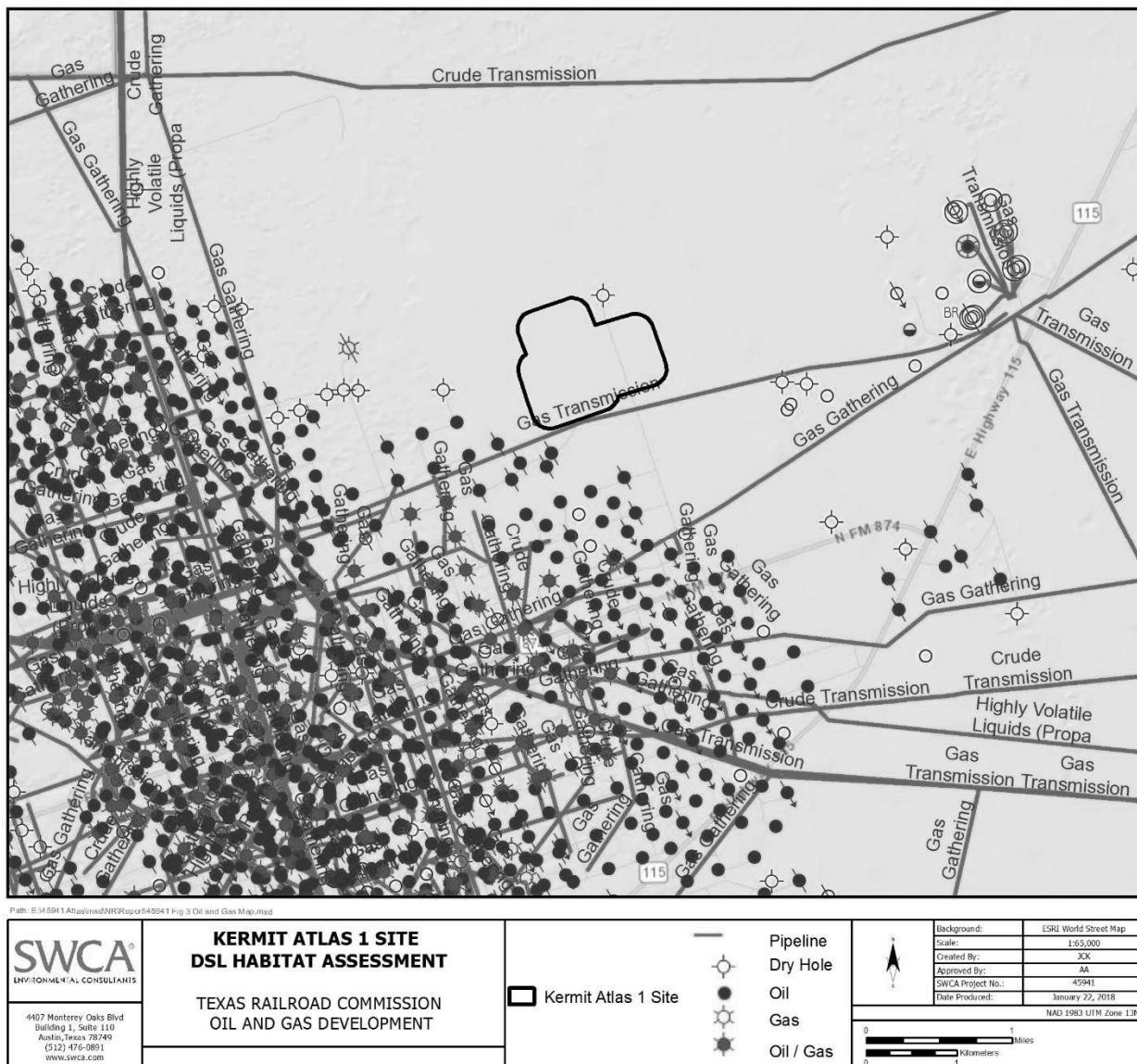


Figure 8. Texas Railroad Commission Oil and Gas Records Near the Kermit Atlas 1 Site.

3.1.4. *Hibbitts Map and 2016 Habitat Suitability Model Results*

The Kermit Atlas 1 Site occurs within a Hibbitts Map polygon classified as having a “very high likelihood of occurrence” of the DSL. The basis for this classification within the context of the Hibbitts Map appears to be the occurrence of historic and “recent” DSL records from elsewhere within the complex of active sand dunes that contains the Kermit Atlas 1 Site (Figure 9). As described in Section 2.4.1, the Hibbitts Map classifies entire dune complexes with the same likelihood of occurrence, regardless of the size of the complex or the amount of fragmentation within the complex.

Similarly, the 2016 Habitat Suitability Model Results suggests that most or all of the Kermit Atlas 1 Site has a “very high” or “high” suitability for use by the DSL.

3.1.5. Available Occurrence Records

There are 23 DSL collection records documented by Vertnet or TXNDD from locations within 5 miles of the Kermit Atlas 1 Site (Figure 9, Table 1). Many of these collections involved multiple individuals from one of 4 general locations.

The only recent DSL locality (i.e., since 1991) in the vicinity was documented in 1998 by Dr. Hibbitts at site described as “Winkler County Park, Jct Hwy 115 and FM 874, 31 57'10N 102 58'12"W” (Vertnet Collection IDs [CIDs] 80078 and 80079). The location coordinates contained within these records place the collection approximately 2.1 miles from the Kermit Atlas 1 Site, and separated from the Kermit Atlas 1 Site by SH 115 and a wide expanse of unvegetated or sparsely vegetated open sands. These are the closest DSL records to the Kermit Atlas 1 Site. The other historic DSL records reported in Vertnet have location descriptions corresponding to sites more than 2.5 miles from the Kermit Atlas 1 Site (i.e., at sites described as “Kermit, 9.7 mi NE on [TX] Hwy 115” or “Kermit, sand dunes”). None of the Vertnet DSL records pertain to collections that are likely to have occurred on the Kermit Atlas 1 Site or in locations contiguous with the Kermit Atlas 1 Site (i.e., where potential habitat was not fragmented by roads or other dispersal barriers).

The TXNDD maps two EORs for the DSL within approximately 2 miles of the Atlas 1 Site: EORs 2546 and 4533 (TXNDD 2018) (Figure 9). The EOR 2546 pertains to a historic DSL observation by K.L. Jones from the University of New Mexico on June 17, 1970, with the location described as the “JUNCTION TX HWY 115 AND FM 874 [894?], 10 MILES NORTHEAST OF KERMIT (= 6 MILES NORTH AND 8 MILES EAST OF KERMIT)” (TXNDD 2018). The TXNDD interprets this location information with a circle having a 100 meter radius (328 feet) centered near the intersection of SH 115 and FM 874. The location of EOR 2546 is approximately in the same location as the 1998 locality for CIDs 80078 and 80079 in the Vertnet database.

The TXNDD EOR 4533 is a historic record of six DSL specimens collected on June 20, 1970, by K.L. Jones and W.G. Degenhardt of the University of New Mexico (Figure 9). The locality information for EOR 4533 states that the collections occurred “9 MILES SOUTH OF JUNCTION OF TX HIGHWAYS 115 AND 128 (= 11 MILES NORTH AND 9 MILES EAST OF KERMIT)” (TXNDD 2018). The TXNDD interprets this location with a circle having an approximate radius of 2 kilometers (1.2 miles) centered on a location approximately 1.25 miles south of the Kermit Atlas 1 Site (Figure 9). However, the text description of the location (i.e., either nine miles south of the junction of SH 115 and SH 128, or 11 miles north and nine miles east of Kermit) would place this locality well north and/or east of the Kermit Atlas 1 Site by between two and ten miles (Figure 9). The mapped location of EOR 4533 by the TXNDD is clearly erroneous based on the original collection record locality information. The mapping of EOR 4533 in the TXNDD illustrates that caution is needed when relying on historic locality information and modern interpretations of such information.

Table 1. TXNDD and Vertnet DSL Records within 5 Miles of the Atlas 1 Site.

Vertnet Catalog ID (CID) or TXNDD Element Occurrence Record (EOR)	Collector Name and Collection Year	Verbatim Locality Description	Interpreted Spatial Representation of Locality As Shown on Figure 9	Notes
CID 32628 32635 (8 records)	M. D. Sabath (1958)	USA Texas Winkler Kermit, 9.7 mi NE on [TX] Hwy 115	SWCA: placed from verbatim description at Lat 31.950308 Long 102.971675	Generalized location reasonably attributed to a roadside collection; conforms to verbatim description.

Vertnet Catalog ID (CID) or TXNDD Element Occurrence Record (EOR)	Collector Name and Collection Year	Verbatim Locality Description	Interpreted Spatial Representation of Locality As Shown on Figure 9	Notes
CID 53506 & 53507 (2 records)	M. D. Sabath (1958)	USA Texas Winkler Kermit, 9.7 mi NE on [TX] Hwy 115	SWCA: placed from verbatim description at Lat 31.950308 Long 102.971675	Generalized location reasonably attributed to a roadside collection; conforms to verbatim description.
CID 32642 & 32643 (2 records)	M. D. Sabath (1961)	USA Texas Winkler Kermit, 9.7 mi NE jct of [TX] Hwy 115 and FM 874	SWCA: placed from verbatim description at Lat 31.9527778 Long 102.97	Generalized location reasonably attributed to a roadside collection; conforms to verbatim description.
CID 32657 32659 (3 records)	M. D. Sabath (1961)	USA Texas Winkler Kermit, 9.7 mi NE	SWCA: placed from verbatim description at Lat 31.950308 Long 102.971675	Generalized location reasonably conforms to verbatim description.
CID 71070 71073 (4 records)	Tinkle and Party (1963)	USA Texas Winkler Kermit, 8 mi NE, Lat 31.813019 Long 102.952831	SWCA: placed from verbatim description at Lat 31.813019 Long -102.952831	Generalized location reasonably conforms to verbatim description
CID 80078 & 80079 (2 records)	T.J. Hibbitts (1998)	USA Texas Winkler Winkler County Park, Jct Hwy 115 and FM 874, 31 57'10"N 102 58'12"W	Vertnet: Lat 31.9527778 Long 102.97 (Datum: WGS84))	Generalized location reasonably attributed roadside collection; conforms to verbatim description.
EOR 4533	W.G. Degenhardt and K.L. Jones. (1970)	9 miles south of junction of TX highways 115 and 128 (= 11 miles north and 9 miles east of Kermit).	SWCA: Alternate locations to the north or east of the Kermit Atlas 1 Site, based on verbatim description	TXNDD mapping does not conform to the location description, which suggests a location between 2 and 10 miles to the north or east of the mapped location. SWCA suggests two alternate locations for this record.
EOR 2546	K.L. Jones (1970)	Junction TX HWY 115 and FM 874 [894?], 10 miles northeast of Kermit (= 6 miles north and 8 miles east of Kermit)	TXNDD: 100m radius circle centered near intersection of FM 115 and FM 874	Generalized location reasonably attributed roadside collection; conforms to verbatim description.